USER GUIDE

Socio-Economic Analysis
and
Impact Assessment
in
Capital Proje[illegible]s

Parks Canada
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 Division
Ottawa, Canada
April 1984

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INTRODUCTION

1.0 PURPOSE

This User Guide to Socio-Economic Analysis and Impact Assessment in Capital Projects provides a set of developed examples, taken from current project files, to assist project sponsors in identifying the type of analysis which will be required at the various stages of project approval for future capital projects. The formalization of these requirements is contained in the approved Parks Canada Directive 2.2.2 on "Socio-Economic Analysis and Impact Assessment in Project Planning", and in the Treasury Board circular on "Approval of Capital Projects and Long Term Capital Plans" (TB Circular No. 787834).

2.0 BACKGROUND

Parks Canada Directive 2.2.2 was prepared to ensure firstly that the requirements for socio-economic analysis and impact assessment be clearly identified where appropriate as part of the planning process for projects, and secondly, that the results of such analysis be considered by management in any subsequent decision. The directive prescribes that where socio-economic effects are major considerations[1], project proposals be screened for their social and economic effects on residents, businesses and communities within a defined geographic area, and that the design and resource allocation reflect visitor use considerations.

The project planning process involves the stages of concept, definition, and predesign with each stage requiring different types of data and levels of analysis. Further, these project stages, as enumerated in the Directive, juxtapose with the Program Planning and Analysis (PP&A) approval process phases comprised of project definition approval, preliminary approval, effective approval, and overrun approval (TB 787834 s8(b)). Socio-economic information is a critical element in this approval process and socio-economic requirements are clearly defined at each phase.

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[1] Major socio-economic effects are considered to be: a) where the scale, capacity or appropriateness of project design requirements are determined from expected visitor use; b) where the project has significant adverse social and economic impacts requiring mitigating and cost factors; c) where the rationale includes potential economic benefits; and d) where the project provides substantial support for other federal government social and economic development policies.

2.1 Socio-Economic Requirements

A project proposal may be defined as the general plan of action "to purchase, develop, operate or maintain land, facilities or services" (PC Directive 2.2.2). The project concept is the initial discussion of the project and describes the rationale and functional fequirements to be met. This stage usually seeks project definition approval. This approval frequently is reflected by an approved Management Plan or area/unit plan, in which case basic socio-economic information will have been included. If the project in question is not part of an approved plan, the project sponsor will provide an explicit description of user requirements including: design capacity, definition of functional areas and physical components, operating season and hours, staff requirements as well as the results of screening for socio-economic benefits and costs.

The project definition stage is reached after the preferred option has been selected and a budget, work plan and implementation schedule are proposed for review. This coincides with preliminary approval which releases funds for purposes of design, land acquisition, investigative studies (eg. engineering) or further research. Socio-economic input is required in:

(1) the determination of project scale and operating capacity (i.e. identification of markets, visitor estimates, or projections of use);

(2) the options analysis which will contain a life cycle cost analysis for each option, and a benefit-cost analysis for the preferred option;

(3) the estimation or projection of secondary economic benefits;

(4) information regarding interdepartmental or intergovernmental co-operation or policy support (i.e. regional development, third-party costs); and/or

(5) any policy issues involved (i.e. fisheries, settlement of native land claims...).

Cost estimates at this stage will be Class C for overall projects and Class B for specific proposals.

The project predesign stage coincides with the effective approval phase which, when granted releases the necessary funds to commence work. Effective approval requires a minimum of Class B cost estimates and a statement reflecting anticipated degree of risk[2]. Socio-economic input at this stage generally relates only to refinements in peak loading estimates or updating user projections.

2.2 Approval Authority

Capital projects related to existing parks, sites and canals are approved either under regional authority, Departmental authority (headquarters), or Treasury Board, depending on the capital cost level, with more rigorous substantiation generally required for projects involving greater cost. Treasury Board approval, where applicable, must be sought not only to change the approved cost of a project, but also to increase or decrease the quality, capability, capacity or scope of the original project even though the original funding level remains unchanged (TB 1983-25 s.9).

The current approval authority levels may be subject to review pending approval of the capital project priorization system currently under design for application to the Long Term Capital Plan.

3.0 IMPLEMENTATION OF DIRECTIVE 2.2.2

SEB recognizes that implementation of recent Treasury Board requirements and the Parks Canada Directive 2.2.2 may result in project sponsors providing information currently not contained in project submissions, but available to managment at the regional and field levels. To provide understanding of the socio-economic requirements and to assist project sponsors in the preparation of project proosals, this User Guide was undertaken. Project sponsors will be able to obtain additional functional advice from their regional socio-economic specialists.

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[2] Risk is "an area of uncertainty (e.g. the quality or quantity of pre-engineering information or an indefinite construction schedule) that is identified when preparing the base estimate and may have a significant effect on costs", e.g. availability of materials or equipment to be used is not known.

This manual is comprised of actual projects based on PIPS submissions. Comments sections explain:

(1) how the information on hand was of value;

(2) how additional data could have been utilized; and,

(3) what will be required for the substantiation of future projects.

The reader will note that in many of the cases, certain sections (preliminary screening for socio-economic impacts, visitor market forecast, life cycle cost analysis, estimation of economic benefits) have the comment "unavailable". This indicates only that this information was not contained in the actual PIPS documentation. All of this data, however, will be required in the future where applicable.

PART 1 - VISITOR RECEPTION CENTRES

A. Introduction

1.0 VISITOR RECEPTION CENTRES

There are three phases of project planning during which socio-economic analysis and impact assessment have a role to play: concept, definition, and predesign.

When the project is presented for discussion and review, the project sponsor is responsible for describing the rationale for the project including the functional requirements to be met. The rationale for the project should also include a thorough options analysis where appropriate. Each option should be screened for potential adverse socio-economic impacts. An options analysis should also include a full life-cycle costing for each option examined. Less frequently estimates of the economic spinoffs generated by the preferred option (eg. job and income creation) will be required.

After an option is selected, during the definition phase of project planning, a project brief is prepared. A budget, work plan and implementation schedule are proposed for review. Any remaining data collection and analysis thought necessary should be indicated at this time. Guidelines for later planning and design decisions are set.

During the predesign phase of project planning, functional requirements may be further refined or modified. For example, the final scale or operating capacity may be chosen on the basis of user projections.

The types of project planning decisions which should be influenced by socio-economic factors include:

(a) the decision of whether or not to build new facilities, to modify existing facilities (add-on or renovate), or to change current operating practices;

(b) decisions about scale, function, operating capacity and level of amenity;

(c) decisions about site selection, access, circulation and parking; and

(d) decisions about the phasing of implementation.

Socio-economic factors such as expected visitor use are significant in the siting and design of visitor reception facilities. Acceptance of the Visitor Reception Centre (VRC) concept should include consideration of feasible alternatives in terms of cost and the attainment of management, service and operational objectives. Any duplication or overlap with existing or proposed programs, facilities, or services within the immediate vicinity should be minimized. The size and characteristics of the visitor market, potential user groups and target audiences that will be served by the proposed facility should be identified as soon as possible. Answers to the questions of who, how many, where, when and at what stage of the users' visit will be required throughout the planning and design process. Definition of the functions or components of a VRC such as siting, pedestrian and vehicular circulation, parking and servicing, media selection, space allocation, and layout of the facility itself require analysis of current or expected visitor usage and trends. Choice of an acceptable design capacity should be based on expected peak visitor and vehicular loadings.

Major alterations or additions changing the scale or operating capacity, and retrofittings of existing visitor reception facilities, may be proposed. For example, parking lots may have to be redesigned to provide larger turning areas for buses (and other oversized vehicles), and washroom facilities altered to accommodate increases in the number of users during peak hours. These changes must be based on an analysis of existing operational problems, the result of a proposed change in the VRC's function, or the outcome of forecasted changes in the visitor market.

1.1 Visitor Markets

User profiles vary among VRC's. Not everyone is a potential user. While the experienced visitor may already be thoroughly familiar with the park, and possess the necessary skills and equipment, other visitors may lack the time or interest to visit the Centre. Potential user and receiver groups (audiences) should be identified. Visitor reception facilities should be planned with specific visitor markets (plus others with whom you may wish to communicate) in mind. Each market segment consists of a group of visitors with similar characteristics, park use objectives, and activities while in the area of interest. However, visitor market segments differ according to:

- trip purpose or reason for visit;
- other planned recreational activities;
- planned use of other facilities and services;
- trip characteristics
  - origin (distance travelled to the park),
  - mode of access,
  - duration of visit,
  - first, repeat visit,
  - overnight visitor, day user.

Visitor expectations are normally reflected in the purpose of their trip to the VRC. Generally, interest and usage increase with distance travelled and length of stay in the Park.

1.2 Siting and Accessibility

The siting of a VRC in relation to the visitors' sequence of arrival and use of the park is one of the major influences on its effectiveness. Proximity to major transportation corridors, visitor accommodation, recreational opportunities, and park features determine not only the function of visitor reception facilities, but also to a large extent the identity of visitors likely to make use of these facilities. More accessible park reception facilities are likely to serve a variety of user groups, where more remote facilities, especially those in destination areas, are likely to attract a more limited audience interested in specific park features or only participants in specific recreational activities. Only a percentage of the visitors found within the area of interest will pull-off and actually use the facility.

Siting	Phase of Visit	User or Receiver Groups
Entrance	On Arrival	- all visitors to Park
At a Stopover or Pullover	En route	- through traffic - sightseers - tour groups
On site	At Destination Area	- participants in outdoor activities - facility based - dispersed - water based - special events

Usage is not a measure of demand. An analysis of real demand involves consideration of the constraints facing visitors. For example, visitors may be unaware of the existence of a facility or would require information about how to get there. Walking distances from designated parking areas may be unacceptable to visitors. Physical access may be a problem for some visitors due to weather and seasonal conditions.

1.3 Design Capacity

If the design capacities selected for the VRC and associated support services are too small, these facilities will have to be modified earlier than necessary to meet requirements which could have been anticipated and accommodated at less expense when the facility was originally constructed. On the other hand, a facility whose capacity well exceeds peak hour demand will be underused and more costly to operate than necessary for the foreseeable future. Choice of an acceptable design capacity should be based on an analysis of current and/or expected trends in visitor use.

The design capacity, while accommodating the majority of visitors during a normal season and hours of operation, should not be based on extreme peaks of visitor use. An analysis of options should include consideration of alternative design and operational strategies for boosting the capacity of the VRC during peak periods. Examples of design strategies include: open space concepts with the potential for combining functional areas to handle "surges"; use of outside displays and temporary facilities, such as trailers and portable units, to answer visitors' basic questions before they enter the building; and provision of exterior access to washrooms. Operational strategies include: shortening the length of presentations and other events or improving the level of service at slack times to encourage visitors to return during off hours; lengthening the hours of operation during peak season; and staggering bus tour arrivals through liaison with tour operators. A good VRC design should minimize the possibility of post-occupancy changes.

1.4 Traffic and Pedestrian Circulation

Both the Centre design and site plan must reflect the expected circulation. The building-to-site relationship, especially the sequence of arrival, parking, and entry, is very important. For example, the building may not be visible from major access points nor its purpose immediately obvious. Traffic tieups may result from visitors who are unwilling or unsure of which route to follow. Pedestrian and vehicle conflicts at road crossings may result in unsafe conditions. Within the facility, visitor movement is influenced not only by the design of the building but also by administrative actions, the presence of others, and varying patterns of visitor interest as they move through the building.

Probable circulation patterns and the distribution of visitors on-site and by functional areas within the building should be identified on a flow chart or sequential analysis diagram. The expected behaviour of visitors at major decision points should be identified (the percentage of visitors expected to turn left or right, use stairs, exit and so on). While sufficient guidance must be provided for a predefined logically organized total site visit, attention must also be given to those who, at varying points, wish to opt out (eg. mothers with small children trying to find washrooms, non-conformists who wish to exit from "inconvenient" places). The design of the traffic and pedestrian circulation systems should allow the visitor to focus on the purpose of their visit rather than finding out where they are or finding their way anywhere else.

1.5 Definition of Functional Areas and Components

The VRC design should be based on a definition of specific and general functions to be accommodated in the facility and corresponding user requirements (both staff and visitor). The scale or capacity of functional areas and components should be based on the expected peak user loadings. Often information on visitors' mode of access, age, sex, and party composition are necessary as well.

Major functional areas include the following:

(a) reception;
(b) exhibits and display;
(c) a-v theatre, auditorium;
(d) office and administrative;
(e) mechanical, maintenance, and other support;
(f) washrooms;
(g) food services;
(h) sale outlets; and
(i) parking.

The space allocation for functional areas and components of a VRC are based on the number of visitors expected (to arrive by a given transportation mode, and) to use the VRC during a design hour (DHV). Examples of minimum space standards for peak visitor loadings by VRC functional area are given below:

Per Person	Functional Area
0.84 m^2 (9 sq.ft.)	A-V theatre, auditorium
1.11 m^2 (12 sq.ft.)	lobby or reception area
1.86 m^2 (20 sq.ft.)	exhibit or display area

Parking requirements will depend on the arrival and turnover rate of different types of vehicles during the design hour. Peak flow capacity of water services will be derived from the maximum number of users expected during a specified period of time.

1.6 Media Selection and Placement

Construction of a VRC should only be undertaken when the opportunities to understand and appreciate park resources cannot be provided by some other means. A media plan should be prepared for the design of a VRC because the VRC must provide the physical conditions needed for a successful communication program. The first step in this process is the choice of themes and preparation of a storyline (identification of the messages to be communicated about each theme). The next step is to identify the best delivery points by assigning the messages on a layout map of the building and site, and then to select the most appropriate media.

Choice of media will depend in part on the characteristics of the target audience, complexity of the storyline, and media objectives (what the planner expects the visitor to be able to see, do, know or feel, as a result of their visit to the facility). A receiver analysis should be prepared which identifies not only the size and characteristics of the potential audience (user groups and their activities, while in the area) but also the prior exposure or interest of site visitors in the messages to be communicated. Measures of the extent to which media are able to attract and hold an audience include the percentage of the audience expected to be reached by the media, the expected span of attention, and level of involvement. The complexity of the storyline will also affect the choice of media.

Storyline	Media
ABSTRACT - COMPLEX	
Concepts	Exhibits
Principles	A-V
Processes	Pamphlets
Definitions	Signs
Facts	
Symbols	
CONCRETE - SIMPLE	

When several media are used to communicate a storyline, the assignment of messages to media and the layout of these media in the facility and on site, should correspond to the visitors sequence of arrival on-site and their usage of the facility.

A media program should attempt to influence how visitors see their environment, what it means to them, and how they feel about it and would be disposed to act towards it. These objectives should be explicitly defined and measurable in principle.

Objectives	Measurement	Examples
Awareness	Perceptual	- able to identify or locate resources, recognize significance
Understanding	Comprehension	- recall facts accurately
Appreciation	Attitudinal	- rating of visit, eg. interesting, informative
Skill Development	Behavioural	- increased participation in recreational activities and park events - decreased public contact with sensitive natural resources and safety hazards.

In informal learning environments, although there may be a great difference in the background, abilities, level of exposure and interests of visitors on arrival, everyone should be able to benefit from the material presented.

1.7 Other Comments

Planners usually want visitors to feel comfortable, safe, interested, and satisfied during their visit to the park. VRC facilities are planned to assist the visitor to make final destination, routing and accommodation plans, to encourage them to participate in outdoor activities and to experience the park. Convenience is very important as visitors do not want to waste their leisure time. Visitor satisfaction is important because other visitors are still the most important source of information about the park and what it has to offer.

B. Checklist

1. Market identification - for whom is the facility being built?

    (a) Have potential user and receiver groups (audiences) been identified? Market segments consist of groups of visitors with similar characteristics, park-use objectives, and recreational participation patterns.

        User or audience profile -
          - size
          - origin (distance travelled)
          - mode of access
          - first, repeat visit
          - overnight visitor, day user

          also -
            - age, sex, education
            - familiarity with park and its resources (eg. experience or skill levels, prior exposure or interest)

        Park use objectives -
          - trip purpose or reasons for visit

        Park activities while in the area -
          - recreational participation rates
          - facility and service usage rates

2. Siting and accessibility - what percentage of the potential market is likely to use the facility?

    (a) Site selection
        Proximity to various visitor market segments
          - to park entrance
          - to nearby accommodation and facilities
          - to major access roads

    (b) What percentage of each visitor market segment (user group or audience) is likely to use the facility or its support services?
          - pull-off rates

    (c) How are visitors likely to arrive on site?
          - mode of access

(d) Have user or other operating constraints been identified?
  - physical access
    - traffic congestion
    - walking distances
    - lineups, crowding
  - time
  - weather and seasonal conditions

3. Design capacity

(a) Has a design capacity (for a normal season and hours of operation) been proposed for the facility and associated support services?

(b) When will the design capacity of the facility and each of its physical components be reached?

(c) Have alternative design and operating strategies, satisfying user requirements, been considered?

4. Traffic and pedestrian circulation

(a) Have probable circulation patterns and the distribution of visitors by functional areas or physical components within the facility and on-site been identified?
  - arrival and turnover rate
  - length of stay
  - direction of visitor flows
  - percentage distribution by area (or peak usage rate)

(b) Have potential areas of congestion, traffic tieups and pedestrian-vehicle conflicts been identified?

5. Definition of functional areas and components

   (a) What is the scale or operating capacity of major functional areas or project components (eg. floor space, parking stalls, litres per hour)?

   (b) What design factors have been used to derive the scale or operating capacity (eg. persons, vehicle parties per hour)?

   (c) How many users are expected during peak periods?
      - projected user loadings for an average, or peak, day or hour

   (d) When will the project become operational?

   (e) When or under what circumstances will the design capacity of each area or component be reached or exceeded?

6. Media selection and placement

   (a) Is the choice of media suitable given the size and characteristics of the audience, and the complexity of the storyline?

   (b) When several media are used to communicate a storyline, does the assignment of messages to media, and the layout of these media in the facility and on-site, correspond to the visitors sequence of arrival on site and usage of the facility?

   (c) To what extent will each of these media be able to attract and hold an audience?
      - percentage of audience
      - attention span - minutes
      - level of involvement

C. Case Studies

Case Study - 1
Rogers Pass
Visitor Reception Centre

Case Study - 2
Lake Louise
Visitor Reception Centre

Case Study - 3
Columbia Icefields
Visitor Reception Centre

Case Study - 4
L'Anse aux Meadows National Historic Park
Visitor Reception Centre

Case Study - 5
Ingonish
Visitor Reception Centre

Case Study - 6
Fort Anne National Historic Park
Visitor Reception Centre

Case Study - 7
Cave and Basin
Visitor Reception Centre

CASE STUDY - 1

ROGERS PASS

VISITOR RECEPTION CENTRE

This case study presents an example of the type of socio-economic analysis required at the predesign phase of a VRC project. Supporting socio-economic information and analysis were all provided and reviewed early in project planning, at the concept phase. Using secondary source data, the visitor market was identified and a design capacity, including VRC floor space and parking requirements, were estimated.

The proposed VRC would be located in a through traffic pull-off area.

1.0 PROJECT

1.1 Forecast Cost - (1982 $) Class A Estimate

Capital Costs

Total	Previous	1980/81	1981/82	P.Y.
1706.1	147.9	22.6	918.5	617.1

Recurring O&M Costs (January 1980 $)

Total - $26,520

1.2 Planning Phase - Predesign

The Rogers Pass area, through its geographical location and its physical character, has been a traditional focal point for visitors to Glacier and Mount Revelstoke National Parks. The Trans-Canada Highway Corridor Plan (1977), the management plan for Mount Revelstoke and Glacier National Parks, and the Rogers Pass Interpretive Management Unit Plan (1976) recommended a strategy for improving park signage, information dispersal, interpretation, and other visitor services. One of the proposals was for the construction of the Rogers Pass Visitor Reception Centre.

The scale of the proposed Centre was originally estimated in 1978 as part of a design brief which also contained an initial description of potential users of the VRC (Long, Mayell and Associates, Rogers Pass Summit/Centre Development Design Brief, 1978). However, no socio-economic analysis of the expected volume of use of the proposed centre was presented in support of the scale of development suggested. Such an analysis was prepared in 1980 by SED at the request of Western Region. It served to determine the design life and square footage requirements of the centre and its related facilities.

1.3 Management Objectives

The overt purpose of the building and area is to encourage highway users to stop and learn, to provide opportunities for a general orientation to the National Park, and, once the user has received the media message, to encourage him to go outside and experience the message on site in a self-interpretive way.

The VRC will allow centralization of all visitor functions, information, interpretation, and resource conservation in Glacier National Park. The centre will be part of a regional information network for visitors along the Trans-Canada Highway. The Rogers Pass VRC will inform and orient people to the Columbia Mountains National Region and to things to see and do in Glacier and Mount Revelstoke National Parks. The centre will also be the staging area for Nakimu Cave tours as proposed in the Nakimu Caves Interpretive Management Unit Plan.

1.4 User Requirements

In 1978 a design brief concerning the proposed Rogers Pass VRC presented an initial estimate of the space requirements for the centre and its auxiliary facilities. The brief estimated that 440 m^2 of floor space was required, broken down into the following functional areas and physical components.

TABLE 1: FLOOR SPACE REQUIREMENTS BY FUNCTIONAL AREA

Areas	m^2 Requirements	%
Public use areas		
lobby	91	20.7
exhibit space	100	22.7
theatre	68	15.5
washrooms	37	8.4
Administrative areas		
offices	27	6.1
workshop	28	6.4
cave	9	2.0
Other space	80	18.2
TOTAL	440	100.0

Source: Design Brief, 1978, section 4.1

In addition there would be 28 m^2 of external space connected to the building, serving as presentation space and a-v observation deck (Design Brief, 1978, section 4.1). The centre would house off-site media (radio, pamphlets, a-v cassette player) and on-site media (models, films), as well as an information deck. It would also serve as a registration station linked to other facilities in the region. The VRC would also provide access from the Trans-Canada Highway and parking for 100 vehicles (Design Brief, 1978, section 4.3). Figure 1 presents the proposed functional relationships between various components of the VRC.

Public use space requirements for the Rogers Pass VRC were prepared by the Superintendent of Mount Revelstoke and Glacier National Parks, and included in the May 1980 PIP submission for the proposed VRC. This proposal called for 240 m^2 of floor space for public use areas and an 85 vehicle parking lot.

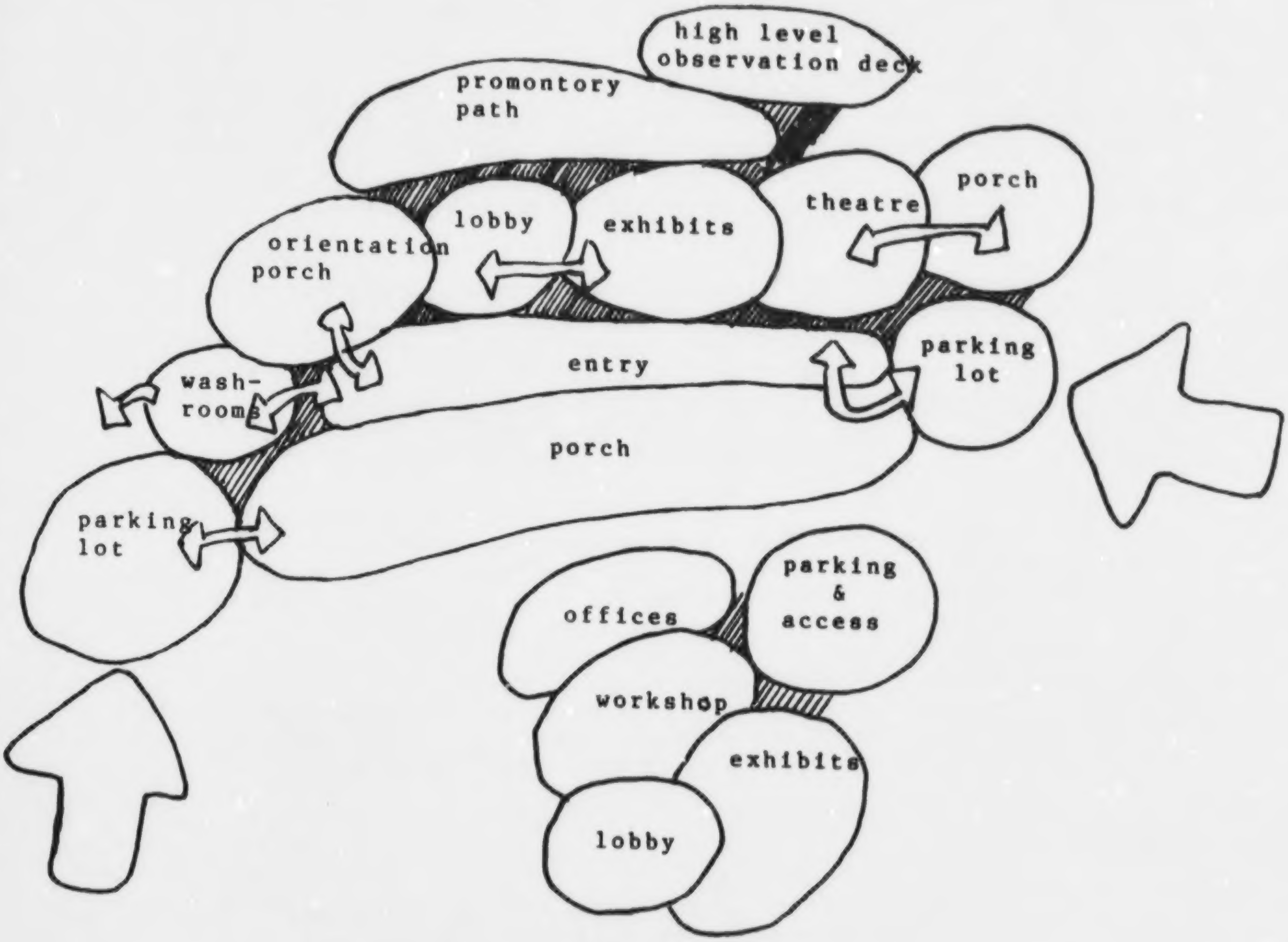
When this submission was reviewed by SED it prepared an estimate of the economically viable design capacity for the VRC, which served to determine the space requirement for the building (J. Roszell and R. Stanley, Methodology for Determining an Economically Viable Capacity Level for Rogers Pass, 1980). SED also estimated the required size of the adjacent parking lot.

However, the PIP submission presented to Treasury Board and approved in 1980 used the recommended user requirements in the Long Mayell and Associates 1978 report. The proposed VRC would operate only during the May to October season (PIP estimates of visitor use, 1980, page 1). Personnel requirements based on a minimum level of staffing for a 24 week season were 1.3 person-years and, based on optimum staffing levels were increased by 0.76 person-years (PIP2, 1980, page 3).

1.5 Comments

The socio-economic analysis for the proposed Rogers Pass VRC was prepared for both the concept and predesign phases of the project proposal. The socio-economic information presented at the concept phase only identified the size and characteristics of the potential visitor market for the proposed Rogers Pass VRC. Data for the predesign phase of the project centred on the projection of user volumes for the proposed centre itself.

FIGURE 1: BUILDING RELATIONSHIPS



Source: Design Brief, 1978, section 7.8.

2.0 PROJECT CONCEPT

2.1 Option Selection

Siting and scale options were reviewed.

2.1.1 Siting

Several sites were considered prior to and after the implementation of the Trans-Canada Corridor Plan (1977). Three site alternatives had been proposed before the Corridor Plan was prepared. These were:

a) the area between the gas station and the Northlander Hotel at Rogers Pass;

b) a bench behind the Summit Monument; and

c) the site of the former Glacier House (Corridor Plan, 1977, page 10).

The Monument site was rejected because of avalache risks and the Glacier House site, despite its larger size and proximity to many features of interest and a day-use area, was also rejected because of high development costs and Trans-Canada Highway (TCH) access problems (Corridor Plan, 1977, page 10).

Other site options were considered during the TCH Corridor planning process. They were:

a) the tennis court and school sites at the Rogers Pass compound;

b) Glacier Station;

c) Hermit maintenance area;

d) Loop Creek;

e) Northlander Hotel; and

f) sites in the Beaver and Illecillewast Valleys.

All were rejected for reasons such as poor access, distance from the main features, adjacency to incompatible facilities at the maintenance compound, high costs, and avalanche risks. The focus, therefore, shifted back to the site between the gas station and the hotel. This site option was selected for the following reasons:

a) the site was large enough to accommodate the planned uses and associated parking;

b) it offered the capacity to blend the centre into the setting;

c) the site was on the highway and associated with an important visitor stopping place; and

d) it was ideal for information dissemination while equally acceptable for interpretive purposes.

(Corridor Plan, 1977, page 10.)

2.1.2 Scale

Scale options were presented in two documents, one prepared in 1978 by Western Region, and the other in 1980 by the Socio-Economic Division.

The earlier paper suggested a 440 m^2 structure that would combine visitor services, administrative functions and other maintenance type services (Design Brief, 1978, section 4). This proposal also estimated that an 85 space parking lot was required for the site.

In 1980 SED prepared an analysis to determine an economically viable capacity level for the Rogers Pass VRC (Roszell, Stanley, 1980). The report concluded that space requirements for the facility should be in the 460 m^2 to 540 m^2 range (converted from sq.ft. estimate based on a 0.31 foot/metre ratio) (Roszell, Stanley, 1980, page 5). The report also suggested that the associated parking lot be built to accommodate 65 to 75 cars, 15 to 17 recreational vehicles, and 5 buses (Roszell, Stanley, 1980, page 5).

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts Unavailable

2.3 Visitor Market Forecast

2.3.1 Visitor characteristics

Based on traffic information for 1977 (WRO Traffic Survey, 1977), it appeared that at least two thirds of traffic on the Mount Revelstoke portion of the TCH were passenger vehicles (see Table 2).

TABLE 2: MODE OF TRANSPORTATION - MOUNT REVELSTOKE NATIONAL PARK, 1977

Vehicle Types	Proportions	
	Eastbound	Westbound
passenger vehicles	65.9	73.4
recreation vehicles	31.0	23.0
trucks	2.6	3.1
buses	0.4	0.5

Source: WRO, Traffic Survey, 1977

During the summer of 1979 twenty-eight unscheduled buses passed through Rogers Pass each day (PIP 1, 1980, page 7).

Annual traffic through Rogers Pass consists of the following segments:

a) recreational oriented highway users such as sightseers, bus tours, picnickers, and campers;

b) day users of the area such as day hikers, skiers, and climbers;

c) Northlander Hotel guests, staff, and area residents; and

d) destination oriented travellers, including commercial and non-commercial traffic.

No estimate of the percentage of vehicles in each segment has ever been prepared. However, the Trans-Canada Highway Corridor Plan indicated the the great majority of off-season traffic in the area is destination oriented and non-recreational. It was added that during the summer months travellers followed a more leisurely schedule (Corridor Plan, 1977, page 3).

2.3.2 Visitation trends

(A) Western Region

Two scenarios of the potential visitor market were presented for the proposed Rogers Pass VRC in the 1980 PIP submission.

(i) Scenario One

The first scenario was based on a variety of secondary data. From a 1977 traffic survey it was estimated that 2,478,128 people passed the proposed VRC site each year. The seasonal breakdown was:

TABLE 3: SEASONAL BREAKDOWN OF TCH TRAVELLERS PASSING THE PROPOSED VRC SITE EACH YEAR (BASED ON A 1977 TRAFFIC SURVEY)

Season	# of People	%
May-October	1,921,096	77.5
November-April	557,032	22.5
TOTAL	2,478,128	100.0

Source: "Estimates of Visitor Use - May to October, Rogers Pass Centre, Glacier National Park", in PIP 1980, page 1.

The ratio of peak season (May to October) and off season (November to April) traffic was used to estimate recreational traffic flows. On this basis it was estimated that peak season recreational traffic flows involved 1,364,065 passengers.

A 1977 traffic study at the proposed VRC site showed that 18 percent of the TCH traffic stopped at the Northlander Hotel and/or gas station in August. Another car count in 1979 showed that 8.9 percent of traffic stopped at the Summit Monument, located one kilometre south of the proposed VRC site. Assuming that use of the VRC during the main season would fall within the range of the Hotel/gas station and the Monument estimates presented above, it was assumed that 12 percent of the total traffic, or 164,000 people, would stop at the VRC during the May to October period. (Source: Estimates of Visitor Use 1980, page 1).

(ii) Scenario Two

The second scenario was also based on the 1977 traffic survey which estimated 2.5 million people travel on the TCH during May to October. Using a pull-off rate of 18 percent, as many as 360,000 people could have stopped at the proposed VRC site during July and August (Estimate of Visitor Use 1980, page 2). Assuming that 50 percent are recreation oriented, and that an additional 10 percent of other non-recreation oriented people would nevertheless be attracted by the new VRC, it was estimated that approximately 198,000 people would have stopped at the VRC site between May and October (Estimates of Visitor Use 1980, page 2). Assuming that 90 percent of these people travel during the daytime, the actual May to October use of the VRC would have been 180,000 people (Estimates of Visitor Use 1980, page 2).

Based on the results from the second scenario it was estimated that the average daily visitation to the VRC during the May to October season would be 1,000 people. Data from the 1979 SED Park Use Statistics manual indicated that weekends during June, July and August were peak visitation periods (Estimates of Visitor Use 1980, page 2). A 1977 study showed 2,300 people per day stopping at the proposed site. Based on this information and assuming that peak traffic occurs during a five hour period in mid-day, it was estimated that peak time visitation at the centre would be in the 200-250 persons per hour range (Estimates of Visitor Use 1980, page 2). Assuming the majority of visitors would view the proposed short film and also take in the exhibits and request information, the average length of stay was assumed to be 30 to 40 minutes.

Based on a 30 minute length of stay, and a national building code requirement of 1.9 m^2 per person for a building similar to the proposed VRC, and assuming that 240 m^2 of floor space would serve for public use, it was estimated that a maximum of 250 people would be able to use the VRC at a time (Estimates of Visitor Use 1980, page 3). Based on an average party size of three people per vehicle in July and August, an 85 vehicle parking lot was estimated to be required (Estimates of Visitor Use 1980, page 3).

(B) Socio-Economic Division

When SED reviewed the 1980 PIP submission for the Rogers Pass VRC, it argued that the socio-economic data presented in support of the proposals were inadequate. It went on to suggest a methodology for determining an economically viable design capacity for the centre.

First, an economically viable current design volume was determined through the following procedure. Assuming that peak recreational traffic passed through Glacier National Park during July and August, daily counts of traffic entering the park's East Gate during that two month period in 1979 were selected. These data points were then reordered and plotted in decreasing order of magnitude. Assuming that the area where the resulting curve started to level off horizontally represented the separation point between extreme and average daily peaks of traffic, an acceptable level of demand was then estimated to be in the range of 3,901 to 4,502 vehicles per day (Roszell and Stanley 1980, page 2).

Based on a 1977 study which indicated that 19 percent of Trans-Canada Highway traffic stopped at the Northlander Hotel, and assuming that 50 percent of vehicles would stop at the proposed VRC site, it was estimated that nine percent of through traffic would stop at the new centre. Assuming a ratio of three people per vehicle, the peak day volume of visitors at the centre was estimated to range from 1053 to 1216 people (Roszell and Stanley, 1980, page 3).

Assuming that the VRC would operate daily from 10 a.m. to 3 p.m. and that an average visitor length of stay at the site would be 30 minutes, ten daily turn around periods were identified and the peak day arrival rate was estimated in the range of 105 to 122 visits. The estimate represented the current design volume for the facility.

Based on this estimate, on 1973 to 1979 traffic counts at the Glacier National Park East Gate, and on a comparison of this traffic trend to overall growth rates in traffic for National Parks, an average annual growth rate in TCH traffic at Rogers Pass of five percent was estimated. Based on this growth rate, a projection was prepared and two alternative design years were considered.

The first alternative estimated that if the centre was built for the 1993-94 season (i.e. a 14 year design life starting in 1979-80), the peak period (half hour) visitor volume would be 240 persons with eight days during the peak months of July and August when demand would exceed capacity (Roszell and Stanley, 1980, page 4).

The second alternative estimated that if the VRC was built for the 1995-96 season (a 16 year design life), the peak period (half hour) volume of visitors would be approximately 270 people with seven days during the July-August period when demand would exceed capacity. (Roszell and Stanley, 1980, Appendix B, Table 2).

Based on these two alternative estimates a 15 year design life was selected with an estimated half hour peak period of visitation expected to range from 240 to 280 persons (Roszell and Stanley, 1980, page 4). However, restrictions placed on the Trans-Canada Highway might limit the maximum number of visits possible at the VRC. For this reason the highway's capacity should be determined and compared with the design volume selected for the VRC (Roszell and Stanley, 1980, page 6).

With this consideration in mind and based on a modified version of the formula used in the 1980 PIP submission (Estimates of Visitor Use, page 3), it was estimated that the total space requirement for the VRC would range from 460 m^2 to 540 m^2 (Roszell and Stanley, page 5).

The size of the parking lot was then determined based on 1976 traffic data for Glacier National Park which presented the following vehicle breakdown:

TABLE 4: MODE OF TRANSPORTATION, GLACIER NATIONAL PARK, 1976

Vehicle Type	%
Car	80.7
Bus	1.7
Recreational vehicle	17.6

Source: Parks Canada Road Inventory and Rating System, in Roszell and Stanley, 1980, page 5.

Assuming a 15 year design life the future half hour peak design volume for the parking facility was estimated at between 80 and 93 vehicles by dividing the number of peak period visits by three (party size). Based on the 1976 traffic breakdown, it was further estimated that the parking lot should be designed for the following vehicle types:

TABLE 5: PARK SPACE ALLOCATION BY VEHICLE TYPE

Vehicle Type	Range of Spaces
Cars	65-75
Buses	5*
Recreational vehicles	15-17

Source: Roszell and Stanley, 1980, page 5.

* Five bus spaces were assumed to be necessary to accommodate convoys.

2.4 Life Cycle Cost Analysis Unavailable

2.5 Estimation of Economic Benefits Unavailable

CASE STUDY - 2

LAKE LOUISE

VISITOR RECEPTION CENTRE

This case study addresses the problem of determining the required size of a VRC using secondary socio-economic data. The proposed VRC would be located in a major destination area. The design capacity for the VRC, including the floorspace requirements by functional area and the number of parking spaces required, were estimated.

1.0 PROJECT

1.1 Forecast Cost - (1982 $) Class B Estimate

Total	Previous	83/84	84/85	85/86
2957.0	2.0	155.0	1200.0	1600.0

1.2 Project Phase - Definition

This project is part of an area management plan approved in 1979. Not only the long range growth proposed for the Lake Louise area but also the Skiing Lake Louise developments approved in 1982 will have to be taken into consideration in the planning and implementation of this project. The Lake Louise Interpretive Management Unit Plan (1979) identified the proposed VRC as the single most important public facility in the plan (page 32). The proposed VRC was to include public services such as an information desk, exhibits, a theatre and washrooms, as well as park administrative offices for the Lake Louise area. It would replace the existing Information Bureau which receives a very high volume of use and would be centrally located on the valley floor.

1.3 Management Objectives

The proposed VRC will fulfill a number of visitor service and interpretive objectives. The main purpose of the Centre is to enhance public understanding and appreciation of Parks Canada's mandate to protect the natural resources in the Lake Louise area. (Rouse, Visitor Forecasts and Design Requirements, Lake Louise Visitors Centre,1983, page 11.) It will provide a welcome and reception service for Park visitors. (Interpretive Plan page 32.) It will accommodate visitor information/orientation and interpretive exhibits and services; social events for both visitors and the local community; as well as area administrative offices (IBI Group, Lake Louise Visitor Centre Management Plan Recommendations, 1979, page 17). The VRC will also serve to provide information and issue the permits required by special interest groups such as backpackers, climbers, horse-backers and skiers. The VRC may also serve as an outlet for Travel Alberta and Travel B.C. (Interpretive Plan, page 33).

1.4 User Requirements

1.4.1 Floor space

A number of proposals have been prepared for the VRC's space requirements. Preliminary user requirements indicated that a 1115 m^2 facility was required with some capacity to expand in the future. That is to say, the total space required was estimated as follows:

TABLE 1: VRC SPACE REQUIREMENTS BY FUNCTIONAL AREA, IBI GROUP ESTIMATES

Functional Area	Space Requirement (m^2)
Public Use Area	
-public lobby/information	200
-exhibit areas	600
Administrative area	
-Parks Canada Bookshop	100
-administrative offices (including Warden Services, L.L. Adm. officer, Visitor and Interpretive Services)	600
Washrooms and Other	400
TOTAL	1900

Source: IBI 1979, page 45; also Lake Louise Development Guidelines, 1981, page 15.

An additional 800 m^2 was also included for an exterior observation deck (IBI 1979, page 45).

The user requirements included in the Lake Louise Interpretive Management Unit Plan (1979) were based on expected volumes of up to 700 people per hour at the proposed VRC. As a result, approximately 1,100 m^2 of space was required, which was broken down by functional areas in the following way:

TABLE 2: VRC SPACE REQUIREMENTS BY FUNCTIONAL AREA, IMU PLAN ESTIMATES

Functional Area	Space Requirement (m^2)*
Public Use Area	
-lobby/reception area	192
-interpretive displays (with theatre)	524
Administrative Area	
-interpretation (offices and storage)	106
-adm. office and storage	72
-resource conservation	76
-program coordinator's office	12
Washrooms and Other	184
TOTAL	1166

Source: Interpretive Management Unit Plan 1979, page 37.

* Original estimates in sq.ft.

An independent study of the VRC and parking space requirements (Leighton, Design for a Lake Louise Visitor Reception Centre, 1980) was based on the following approach: (a) that an estimated 600 visitors would use the VRC at peak hours; (b) US Park Service space planning methodology and criteria; and (c) the assumption that 1/3 of visitors would be using each of the VRC's three main functional areas at a given time. A total of 1465 m^2 of floorspace would be required, broken down by functions in the following way:

TABLE 3: VRC SPACE REQUIREMENTS BY FUNCTIONAL AREA, LEIGHTON'S ESTIMATES

Functional Area	Space Requirement (m^2)
Public Use Area	
-reception/information	222
-exhibit and viewing	372
-auditorium and assembly	168
Washrooms and Other	393
TOTAL	1465

Source: Leighton, Design for a Lake Louise Visitor Reception Centre, (Appendix D), 1980.

Finally, a study prepared by Parks Canada's Socio-Economic Division (SED) in 1983 determined that, excluding administrative requirements, approximately 226.3 m^2 was required to meet a projected design volume of 147 people. This space requirement estimate assumed a 71 percent level of service during peak hours and a 98 percent level of service during regular hours. It was broken down as follows:

TABLE 4: PUBLIC USE SPACE REQUIREMENTS,
SED'S ESTIMATES

Functional Area	Space Requirement (m^2)	%
Theatre	67.0	30
Information	15.5	7
Exhibit/Viewing	143.8	63
TOTAL	226.3	100

Source: Redekop, Lake Louise Visitor Reception Centre Socio-Economic Analysis, 1983.

It was noted by SED that the proposed VRC was subject to accessibility constraints. In other words, visitors exiting the Trans-Canada Highway would have to take a right turn, then an immediate left across traffic into the VRC. This situation could affect visitation levels to the Centre.

Information from the SED analysis and from a Western Region (WRO) report on the same subject (Jim Rouse, Visitor Forecast and Design Requirements, Lake Louise Visitors Centre, WRO, July 1983, 55 pages) was used to provide the most recent estimate of space requirements for the proposed VRC. Based on this latest assessment, 453 m^2 of public use floor space was seen as required, divided according to the following functional areas.

TABLE 5: PUBLIC USE SPACE REQUIREMENTS, DERIVED
ESTIMATES FROM SED AND WRO ANALYSES

Functional Area	Space Requirement (m^2)	%
Theatre	49	10.8
Information	79	17.4
Exhibit/Viewing	325	71.8
TOTAL	435	100.0

1.4.2 Parking

In 1979 the IBI Group recommended that the parking lot for the VRC be built to accept 175 vehicles.

(IBI, page 44.) The IMU Plan estimated that 104 parking spaces were required, 30 of which should be designed for oversized vehicles (Appendix D). WRO (1983) estimated that 60 private vehicle spaces should be built with an additional 8 spaces provided for buses (Rouse, 1983, pages 42 and 44). Finally, revised estimates based on information contained in the WRO report called for a 62 to 74 private vehicle parking lot with suggested space allotment for 7 buses.

1.4.3 Operating season

The proposed VRC would be used year round by a full spectrum of visitors to the area (Rouse, 1983, page 11).

1.5 Comments

The visitor use analyses in support of this project were prepared from a variety of secondary data and required professional judgements based on experience with similar types of projects. The methods used to estimate socio-economic design factors relevant to the project reflect the shortcomings of the data collection efforts for the project.

The resulting analyses are nevertheless helpful in reviewing the VRC design requirements.

2.0 PROJECT CONCEPT

The proposed Lake Louise Visitor Reception Centre is part of a long range development plan for the Lake Louise region.

In 1978 a survey was undertaken to assess the impact of future traffic volumes in the Lake Louise area, and to provide some general indications of visitor use characteristics and concerns about the area, as input to the preliminary stages of land-use plan development. (IBI Group, Summer Visitors Survey, Lake Louise Visitors Centre, 1978.) A land use report was presented for approval in 1979, along with recommendations respecting utilities and transportation systems. Recommendations that were accepted in 1980 as part of the Lake Louise Management Plan included the selection of the valley floor as the site for a multi-use visitor service complex which would be known as Village Lake Louise. One of the facilities recommended for construction, the Visitor Reception Centre, was approved in principle as a key building in the overall success of the development. Following the 1978 Visitor Survey and Public Participation Program interpretation was identified as the single most important element in the future preservation of Lake Louise.

Finally, in 1981 Development Guidelines for the proposed Visitor Service Centre established a two-fold program for the Village Centre:

1) a Visitor Reception Centre to be operated by Parks Canada; and

2) a retail/commercial development and staff housing, under the responsibility of private sector operators.

2.1 Option Selection

2.1.1 Siting

Three alternatives were considered for the location of Village Lake Louise, each based on a different concept. (IBI Group, Lake Louise Planning Study, Interim Planning Report, 1979, pages 17-24.) The three concepts were:

a) the Valley Floor Village Concept whereby most overnight accommodation, combined with the visitor centre facilities (including the VRC), would be located on the valley floor;

b) the Lakeside Village Concept where the VRC would be built, along with most new overnight accommodation, near Chateau Lake Louise and Deer Lodge; and

c) the Three Village Concept whereby the primary area of development would be at the foot of the ski hill with smaller levels of development on the valley floor and lakeside. This would result in three developed areas of about equal size, but different in character.

Each of the concepts were evaluated for their respective strengths and weaknesses.

The Valley Floor Village Concept was selected as the best option as it presented the least potential for environmental impact, the highest transportation system efficiency, the best use of serviced land, and least cost.

Because the proposed VRC would be a multifunctional facility, the lakeside site was considered to be inappropriate for some of these functions, such as Lake Louise administration and operations, issuing of permits, village activities and a staging area for visiting the Lake Louise area. In fact, it was felt that locating the VRC at the lakeside would result in the need for a second facility to be built on the valley floor for administrative purposes. Increased congestion problems at the lakeside during the summer was also expected as visitors would prolong their stay in the area in order to visit the VRC. In addition, no appropriate location for the proposed centre could be found at the lakeside. Finally, the Minister responsible for Parks Canada is publicly committed to restricting development at the lakeside, relieving congestion problems, and concentrating on development of the valley floor.

As for the Three Village Concept, although it presented good site qualities, it was found to have greater potential environmental impacts than the other options, the least efficient transportation system, and the highest cost for servicing land.

2.1.2 Scale

As discussed previously, various analyses have been prepared on the scale of the proposed VRC. While the initial IBI Group Interim Plan called for a complex requiring 900 m^2 of visitor use floor space (Leighton, 1980, page 26), an independent estimate reduced this requirement to 762 m^2 (Leighton, 1980, page 26). Finally, a study conducted by SED in 1983 suggested that 226 m^2 would satisfy the space requirement for the three major functional areas serving visitors at the VRC. (Redekop, 1983.) Added to this would have to be the required office and washroom spaces.

A WRO analysis, also prepared in 1983, provided a basic breakdown of projected use of the proposed centre. Although it did not provide the space requirement for the VRC, it did estimate that the proposed complex be built to receive about 249 people and that this volume of use would be reached by 1996.

A final decision on the scale of the project is pending.

2.2 Screening of Potential Adverse Socio-Economic Impacts Unavailable

2.3 Visitor Market Forecast

2.3.1 Visitor characteristics

A visitor survey conducted for 9 days during the summer of 1978 (IBI Survey, 1978) provided a general profile of visitors to the Lake Louise area. Most of the following visitor characteristics have been extracted from this survey.

Table 6 suggests that summer visitation is overwhelmingly automobile oriented, with close to 88 percent of visitors arriving by car.

TABLE 6: PROPORTION OF LAKE LOUISE AREA VISITORS BY MODE OF TRANSPORTATION

Mode of Transportation	%
Car	87.6
Bus	11.0
Train	0.5
TOTAL	99.1*

Source: Del Can, Lake Louise Planning Study, Transportation Report, 1979, page 20.

* Does not add up to 100 percent probably because pedestrian and cyclists are not included.

The survey showed that 64 percent of visitors to the Lake Louise area were Canadians, and thirty percent were Albertans. Table 7 summarizes the visitor origin figures.

TABLE 7: PROPORTION OF LAKE LOUISE AREA VISITORS BY PLACE OF ORIGIN

Origin	%
Calgary and Area	13
Other Alberta	17
B.C.	11
Other Province	23
U.S.A.	30
Other	6
TOTAL	100

Source: IBI Survey, 1978.

A majority of the visitors to the Lake Louise area (56%) were visiting the lakeside area for the first time.

As Table 8 shows, the 26-35 and 36-50 year old age groups represent a significant proportion of lakeside visitors.

TABLE 8: AGE PROFILE OF LAKE LOUISE AREA VISITORS

Age Group	%
0-15	24.0
16-25	17.7
26-35	20.2
36-50	20.6
51-65	12.8
65+	4.5
No answer	0.2
TOTAL	100.0

Source: IBI Survey, 1978.

Visitors are more likely to travel with a family. The IBI Group sample showed that 77 percent of visitors were travelling with their family (see Table 9).

TABLE 9: LAKE LOUISE AREA VISITOR PARTY TYPE

Party Type	%
Family	77
Group	18
Self	5
TOTAL	100

Source: IBI Survey, 1978.

As Table 10 illustrates, while most visitors that came to Lake Louise in 1978 spent some time sightseeing, a relatively limited number of persons used the existing interpretive services.

TABLE 10: MAJOR ACTIVITIES WHILE IN THE LAKE LOUISE AREA

Activity	% of Sample
Sightseeing	85
Auto Services	34
Use Restaurants	31
Hiking- Backpacking	20
Other	15
Use Interp. Services	13
Camp	12

Source: IBI Survey, 1978

Visitors also identified facilities and services they felt were in need of improvement. Although interpretive and educational information facilities were identified by only 13 percent of the sampled population (see Table 10), the results indicated that improved interpretive services would encourage greater visitor awareness of the Lake Louise area. And, as Table 11 suggests, a very significant proportion of visitors would appreciate interpretive developments which would allow them to improve their knowledge of the landscape typical of the Lake Louise area.

TABLE 11: VISITOR INTEREST IN INCREASING KNOWLEDGE OF ROCKIES

Degree of Interest	%
Very Interested	53
Somewhat Interested	28
Little or No Interest	18
	99

Source: Redekop, 1983.

* Does not equal 100 percent due to rounding.

2.3.2 Visitation trends

Close to one million people visit Lake Louise each year. In 1978 some 600,000 persons visited the lakeside area between June 25 and September 7. A low growth projection of 0.6 percent per year shows that by 1995 670,000 people will visit the lakeside during the peak season. Approximately 2/3 of annual visitation occurs during June, July, and August. The July 1978 average daily visitation rate at the lakeside was estimated at approximately 9,000 persons. In fact up to 13,500 persons can be expected at the site on a busy July day. (Leighton, 1980, page 16.)

Winter visitation is largely related to the snow conditions at the ski hill, although weekend "get aways" to the Chateau Lake Louise are increasing as is cross-country skiing in the area.

In the main, the winter visitation market to Lake Louise would be comprised of more repeat visitors than in the summer months. The demands for information services would therefore be correspondingly less.

2.4 Life Cycle Cost Analysis Unavailable

2.5 Estimation of Economic Benefits

The direct and indirect employment and income impact of constructing the VRC can be estimated using the Statistics Canada "Interprovincial Input-Output Model". This model suggests a provincial employment impact of 0.372 person-years (direct and indirect) per $20,000 expenditure in non-residential construction.

Applying this ratio, the gross person-year impacts can be estimated for the province of Alberta (see Table 12).

TABLE 12: ALBERTA EMPLOYMENT IMPACTS
VRC CONSTRUCTION

Construction Cost (1982 $)	Ratio of New Person-Years per $20,000 Expenditures	Alberta Person-Years Generated
$2.9 m	.372	53.9

Source: Redekop, 1983.

The direct and indirect income impact can be similarly estimated based on an impact ratio of .607 for every dollar expenditure in non-residential construction in Alberta. The following income impacts can be estimated as a result of VRC construction (see Table 13).

TABLE 13: ALBERTA INCOME IMPACTS
VRC CONSTRUCTION

Construction Cost (1982 $)	Ratio of Dollar Impact per Expenditure in Non-Residential Construction	Direct and Indirect Income Impacts Alberta
$2.9 m	.607	$1,760,000

Source: Redekop, 1983.

3.0 PROJECT DEFINITION

Two socio-economic analyses were prepared during 1983 with the main objective of estimating the current (1982) peak visitor volume that would have occurred if the proposed VRC had been in operation. The studies then go on to provide projections of peak visitor volumes for the VRC at different points in time. This analysis allows the planners to choose a design capacity for the facility that would satisfy visitor needs most efficiently.

3.1 Evaluation of Socio-Economic Impacts Unavailable

3.2 User Projections

Two different approaches have been used to determine the design capacity of the proposed Lake Louise VRC. (D. Redekop, Lake Louise Visitor Reception Centre Socio-Economic Analysis, SED 1983; and J. Rouse, Visitor Forecasts and Design Requirements, Lake Louise Visitors Centre, WRO 1983.)

Both approaches will be compared and an effort will be made to point out the strengths and weaknesses of each approach. Aspects of both approaches will be incorporated in revising estimates of the projected volume of use that the proposed VRC will receive during peak periods.

Each paper based its estimate of the required design volume on quite different data sources. While SED's paper based its estimates on traffic volume data and pull-off rates in the Lake Louise area, WRO's document mainly relied on actual use data from the existing Lake Louise Information Bureau and assumptions derived from a survey of a similar office in Yoho National Park.

3.2.1 SED analysis

SED arrived at a 1982 design volume through the following steps. First, it identified the design day from traffic volumes on the Trans-Canada Highway during the summer of 1982 (June 25 to September 7). Secondly, the design day volume was based on the average of a range of values which in the judgement of the analyst fell within the normal range of highs and lows in daily traffic volume. The design day traffic volume for the eastern access point was 10,260 vehicles and for the western access point was 8,862 vehicles in 1982. Thirdly, the peak traffic period was selected on the basis of a one day survey conducted on July 1st, 1978. (Del Can 1979.) During the peak hour, 12:00 to 1:00, 780 vehicles entered the area from the eastern access point (7.6% of daily traffic), while 736 vehicles enter the area from the western access point (8.3% of daily traffic), during the summer of 1982. Then peak hour pull-off rates derived from intersection counts taken during the 1982 Traffic Survey were applied to the peak hour traffic volumes. It was found that 28.0 percent of the east bound traffic (223 vehicles) and 17.4 percent of the west bound traffic (128 vehicles) on the Trans-Canada Highway turned off the highway at Lake Louise. Finally, on this basis a design hour volume of 351 vehicles was selected.

From the Del Can Study (1979) it was assumed that three of these vehicles were buses. Passenger vehicles had an average party size of 3.22, while buses carried an average of 40 people. The IBI Group Survey (1978) identified the major segments comprising the Lake Louise visitor market. That portion of visitors which went to Lake Louise primarily to obtain services accounted for 17 percent of the market, while overnighters represented another 20 percent, and Lake Louise visitors 63 percent. Three VRC capture rate scenarios (i.e. possible levels of use) were proposed for each of the market segments. (Table 14.)

TABLE 14: VRC CAPTURE RATE SCENARIOS

Market Segment	Scenarios		
	1	2	3
Obtain Services	1.0%	2.5%	5.0%
Overnight Visitors	5.0	10.0	15.0
Lakeside Visitors	10.0	15.0	20.0

Source: Redekop, 1983.

Given an assumed length of stay of thirty minutes at the VRC and the proposed capture rates, a total of 123 persons were expected to visit the VRC during the design period, in 1982.

TABLE 15: 1982 DESIGN VOLUME

Market Segments	Vehicles*	People*	Capture Rate (%)
Lakeside Visitors	11	35	10.0
Overnight Visitors	2	6	5.0
Service Users	1	2	2.5
Bus Tours	2	80	100.0
TOTAL	16	123	

Source: Redekop, 1983.

* Based on a half-hour length of stay.

Based on this 1982 user volume estimate and assuming a 1.2 percent average annual growth rate in visitation, which represents the actual growth rate in traffic on Lake Louise Road between 1977 and 1982, SED prepared a design volume projection to the design year of the facility (i.e. the year when the facility is expected to reach its proposed capacity). SED proposed a design volume of 147 people for the year 2000. On this basis it was estimated that for 71 percent of peak visitation periods and 98 percent of regular visitation periods, visitors could be served with little or no waiting.

From the design year volume estimate of 147 people, and based on square metres/person standards used by the U.S. National Park Service and by Parks Canada's Western Region, space requirements for three public use functions were estimated to be in the order of 226 m^2, broken down in the following way:

TABLE 16: VRC PUBLIC USE SPACE REQUIREMENTS BY FUNCTION

Function	Design Volume (Number of Visitors)*	m^2/person Standards	Floor space requirements (m^2)	(%)
Theatre	80	0.84	67.0	30.0
Information	14	1.11	15.5	7.0
Exhibition	62	2.32	143.8	63.0
TOTAL			226.3	100.0

Source: Redekop, 1983.

* Based on half hour stay.

3.2.2 WRO analysis

WRO's estimates of the 1982 design volume are based on a different type of data set and manipulation. Instead of the traffic data used by SED, WRO relied on current visitor use figures from the existing Lake Louise Visitor Information Bureau. In 1982 an estimated 42,021 visitors used the Bureau during the summer.

Basing itself on the enquiries/party ratio of 0.82 estimated from an evaluation of operations of the VRC located at the west boundary of Yoho National Park, WRO estimated that approximately 51,245 parties entered the existing Information Bureau site at Lake Louise in 1982. Assuming an average party size of 3.2 persons, it was estimated that approximately 163,984 people entered the Information Bureau parking lot that year. Based on a comparison of the number of enquiries at the Information Bureau with the number of estimated vehicles entering the Lake Louise area during the June to September 1982 period, and applying the 0.82 enquiries/party ratio, WRO then estimated that close to 11 percent of the parties travelling in private vehicles that left the Trans-Canada Highway at Lake Louise entered the Information Bureau parking lot (Rouse 1983, page 31.) Assuming that the proposed VRC will provide more services and will likely be more attractive than the existing Information Bureau, it was estimated that the new facility would attract 14 percent of Trans-Canada Highway private vehicle traffic entering the Lake Louise area. (Rouse 1983, page 31.) In other words, 62,494 parties travelling in private vehicles would have used the VRC site had it been operational in 1982. (Rouse 1983, page 32.) From additional use data obtained from the Yoho National Park west boundary VRC it was assumed that 50 percent of visitors entering the parking lot of the proposed Lake Louise VRC in private vehicles would actually enter the VRC. (Rouse 1983, page 36.)

During the peak day at the Information Bureau in 1982, 586 parties entered the building. Average summer peak hour usage at this centre occurs in the late morning and late afternoon. It was estimated to represent 12 percent of the daily users. Based on these peak day and peak hour criteria, on the 0.82 enquiries/party ratio, and on the three levels of service (LOS) design criteria used in the Miette Hot Springs, Attendance Analyses and Forecast report (Rouse and Wellock, 1981), the 1982 peak hour volumes of parties arriving in private vehicles at the existing Information Bureau were estimated as follows:

TABLE 17: TOTAL NO. OF PARTIES ARRIVING BY PRIVATE VEHICLE AT EXISTING INFORMATION BUREAU DURING THE PEAK HOUR BY LEVELS OF SERVICE

Level of Service	Number of Parties/Peak Hour
100%	85
98%	78
95%	72

Source: Rouse 1983, page 42.

For WRO LOS at a VRC represents the portion of enquiries that are dealt with in a prompt and satisfactory manner. (Rouse 1983, page 53.) It is assumed that at 100 percent LOS most enquiries at the VRC would be served without waiting; at 98 percent LOS there would be congestion for 12 hours over 8 days; at a 95 percent LOS congestion would occur on 28 hours over 24 days. This LOS scale does not differentiate between peak and regular hour use estimates. Based on U.S. National Park Service VRC studies, length of stay for visitors travelling in private vehicles was estimated at 25 minutes (Rouse 1983, pages 32-33.) This represents the design period. With a 27 percent increase in the number of parties from private vehicles expected to use the new VRC, and assuming an average party size of 3.2 persons, the number of visitors arriving at the VRC site in private vehicles during the design hour and period (25 minutes) would be:

TABLE 18: TOTAL NUMBER OF VISITORS ARRIVING IN PRIVATE VEHICLES AT NEW VRC DURING DESIGN HOUR BY LOS IN 1982

Level of Service	Design Hour Visitor Volume
100%	346
98%	317
95%	294

Source: Rouse 1983, page 44.

Assuming that 50 percent of these visitors would enter the new VRC, the peak hour and peak period volume of use inside the building would be:

TABLE 19: TOTAL NUMBER OF VISITORS TRAVELLING IN PRIVATE VEHICLES AND ENTERING NEW VRC DURING PEAK HOUR AND PEAK PERIOD BY LOS IN 1982

Level of Service	Peak Hour Visitation	Peak Period Visitation*
100%	173	73
98%	159	67
95%	147	62

Source: Rouse 1983, page 44.

* Based on 25 minute stay.

To complete the 1982 design volume estimates, the number of bus visitors to the VRC was then calculated. The bus market was broken down into two categories: scheduled tours and charter tours. Based on a suggestion by Brewster Transport Company Limited, the only operator offering scheduled bus tours to Lake Louise, it was assumed that two buses would arrive at the VRC during the late morning period, each containing an average of 35 passengers (Rouse 1983, page 37.) The length of stay would likely be 30 minutes. In addition, it was assumed that 75 percent of passengers would use the VRC. This means that 53 people would enter the VRC.

Convention and vacation group charter tour buses currently average 45 per day in the Lake Louise area. Over one third of these make only a brief visit to the site. The others could include a stop at the VRC as part of their itinerary. Assuming that existing management techniques are used to control the flow of charter bus traffic at the Lake Louise VRC, then, for base year 1982, up to three charter tours with 35 passengers each could visit the proposed VRC simultaneously during the late morning. A 45 minute stop was assumed, based on the fact that passengers from such buses are first time visitors who will want to view exhibits and audio-visual presentations which last close to 30 minutes. It was also assumed that 50 percent of charter tour bus passengers will enter the VRC. From this information it was estimated that in base year 1982, 53 people from this type of tour bus would also enter the VRC during the 30 minute peak or design period.

Adding up the estimated base year volume of visitors travelling in private vehicles together with the two bus market segments of visitors to be at the VRC during the design period, we obtain the following results for each level of service:

TABLE 20: TOTAL NUMBER OF VISITORS AT THE VRC DURING DESIGN PERIOD* IN 1982 BY LOS

Level of Service	Number of Private Vehicle Visitors	Numer of Bus Visitors	Total
100%	73	106	179
98%	67	106	173
95%	62	106	168

Source: Rouse 1983, pages 44-45.

* Based on 25 minute stay.

Assuming a compound annual growth rate of 1.25 percent for private vehicle traffic to Lake Louise and a two percent rate for buses to the area, WRO prepared projections of use volume, for each of the three levels of service, to the year 2006 planning horizon. The results of these projections suggested that the facility be built to receive 220 people, which would be adequate for 98 percent of visitors until about 1996 (i.e. mid-way through the planning horizon for the facility).

Although WRO's analysis did not provide an estimate of floor space requirements for the proposed facility, it did estimate the required size of the theatre and information areas inside the VRC, as well as the number of spaces required for the adjacent parking lot.

Based on U.S. National Parks data on VRC use, it was assumed that 10 percent of visitors travelling in private vehicles would view the films presented in the VRC theatre. While scheduled tour bus passengers would not have time to view these films, it was assumed that 25 percent of charter tour bus visitors would be attracted to such features.

Based on these private vehicle and charter bus passenger percentages the base year design load, by level of service, for the theatre was estimated to be as follows:

TABLE 21: VRC THEATRE BASE YEAR DESIGN LOAD BY LOS

Level of Service	Design Load (Number of People)*
100%	44
98%	42
95%	41

Source: Rouse 1983, page 46.

* Based on 25 minute stay.

Growth rate projections for people travelling by private vehicle and by charter tour bus were applied to these figures. WRO suggested that a theatre designed for approximately 55 persons would be adequate for 98 percent of the time.

TABLE 22: BASE YEAR PEAK HOUR LOADING OF VRC INFORMATION DESK BY LOS

Level of Service	Peak Period Loading
100%	118
98%	110
95%	104

Source: Rouse 1983, page 48.

Growth rate projections for people travelling by private vehicle and by bus were again applied to the base year figures. WRO suggested that the information desk be built to respond to 135 enquiries per hour, which would be adequate for 98 percent of the projected number of visitors through to about 1996. (Rouse 1983, page 48.)

As for parking, WRO estimated that, assuming a 1982 peak hour use by 92 to 108 parties of the proposed VRC sites, (each party travelling in one private vehicle), a half hour design period, and the presence of five buses during that time, the following number of parking spaces would have been required for private vehicles and buses in 1982 at different levels of service:

TABLE 23: BASE YEAR PARKING SPACE REQUIREMENTS BY LOS

Level of Service	Parking Space Required for Private Vehicles*	Parking Space Required for Buses	TOTAL
100%	54	5	59
98%	50	5	55
95%	46	5	51

Source: Rouse 1983, page 42.

* Based on a half hour stay.

Respective growth rates applied to private vehicles and buses were used to prepare parking lot requirements to the year 2006. WRO suggested that, based on these projections a parking lot be built to receive 60 private vehicles and eight buses, which would meet 98 percent of visitor requirements until about 1996 (Rouse 1983, page 43).

WRO's analysis is felt to be more reliable than SED's for two reasons. First, WRO estimates design load based on population data that relate more directly to the type of use the new VRC will be subject to than does the SED estimates. Second, WRO's current and projected use estimates result from a more systematic manipulation of data.

However, instead of basing its estimates and projection on the actual number of people that entered the existing Lake Louise Information Bureau in 1982, WRO derives from this figure a hypothetical count of enquiries made at the Information Bureau during that year and bases its subsequent estimates and projections on this new value. Although the rationale behind the enquiries figure is not presented, it appears the estimate resulted from a comparison of 1982 and 1983 use figures for the May to August period at the Bureau. (In 1982 the unit of count was persons, while in 1983 it was changed to enquiries.) If such is the case, then the enquiries total may be inaccurate as it is based on a ratio calculated from two different sets of data for two different years without consideration for possible other causes in the variations between each year's count.

One way to overcome this problem would be to interpret Information Bureau 1982 user counts as the number of persons entering the bureau. The following design volume projection and related space requirement estimates are based on the original 1982 user count data at the Lake Louise Information Bureau and additional information from both the SED and WRO analyses.

3.2.3 Revised user projections and space requirement estimates

In 1982 76,678 persons travelling in private vehicles entered the existing Lake Louise Information Bureau (Parks Canada, SED, Park Use Statistics, 1982-83, Ottawa, 1983, page 276; also, Redekop 1983, page 29; and Rouse 1983, page 9). Assuming that the new VRC would have a 27 percent greater attraction capacity than the existing Bureau and that 50 percent of people arriving at this new VRC site would actually enter the Centre (Rouse 1983, page 44), it was estimated that 194,762 visitors would have arrived at the site by private vehicle had the new centre been operating in 1982. During the 1982 peak day at the Information Bureau, 1,106 people entered the building. Average summer peak hour usage at this centre occurs in the late morning and late afternoon and it was estimated to represent 12 percent of the daily users. Based on these peak day and peak hour criteria, and on the three levels of service design criteria used in the WRO study (Rouse 1983, page 42), the 1982 peak hour volumes of users arriving in private vehicles at the existing Information Bureau were estimated as follows:

TABLE 24: TOTAL NO. OF PEOPLE ARRIVING BY PRIVATE VEHICLES AT EXISTING INFORMATION BUREAU DURING THE PEAK HOUR BY LEVELS OF SERVICE

Level of Service	Number of People/Peak Hour
100%	133
98%	121
95%	112

Based on the U.S. National Park Service VRC studies, length of stay for visitors travelling in private vehicles was estimated at 30 minutes (Rouse 1983, pages 32-33). This represents the design period. With a 27 percent increase in the number of visitors expected to use the new VRC, the design hour and period would be:

TABLE 25: TOTAL NUMBER OF VISITORS ARRIVING IN PRIVATE VEHICLES AT NEW VRC DURING DESIGN PERIOD* LOS

Level of Service	Design Hour Visitor Volumes	Design Period Visitor Volume
100%	169	85
98%	154	77
95%	142	71

* Design period based on a half hour stay.

The number of bus visitors to the VRC estimated by WRO was used to complete the 1982 design volume estimates. In other words, it was assumed that two scheduled tour buses and three chartered tour buses, each carrying an average of 35 passengers, would stop at the new VRC during the late morning at a time when the peak period would occur. It was further assumed that 75 percent of scheduled tour bus passengers (53 people) and 50 percent of charter tour buses (53 people) would enter the VRC during the design half hour period. (Rouse 1983, pages 37-40.)

Adding up the estimated base year volume of visitors travelling in private vehicles together with the two bus market segments of visitors that would be at the VRC during the design period, we obtain the following results for each level of service:

TABLE 26: TOTAL NUMBER OF VISITORS AT THE VRC DURING DESIGN PERIOD* IN 1982 BY LOS

Level of Service	Number of Private Vehicle Visitors	Number of Bus Visitors	TOTAL
100%	85	106	191
98%	77	106	183
95%	71	106	177

Source: Rouse 1983, pages 44-45.

* Design period based on a half hour stay.

User projections to year 2006 were then prepared, based on an average annual growth rate of 1.25 percent in private vehicle traffic and a two percent average annual growth rate in bus traffic to Lake Louise. The results, by levels of service, were as follows:

TABLE 27: DESIGN PERIOD* USE VOLUME OF VRC AT THREE POINTS THROUGH THE PLANNING HORIZON BY LOS

Level of Service	Visitor Use Volume by Year 10 (1996)	15 (2001)	20 (2006)
100%	260	290	324
98%	249	277	309
95%	240	269	298

* Based on a half hour stay.

For comparative purposes, SED's design year 2000 estimated a 147 design volume, while WRO suggests that the VRC should be built at the 1996 use volume and should meet a 98 percent level of service or be able to receive 300 people. Based on levels of service standards presented in the SED and WRO study, the 95 percent LOS used by WRO represents the criteria for estimating the design year use volume. Assuming a fifteen year design life, starting in 1986, it was estimated that the proposed VRC be built to serve 269 visitors at a time without congestion during 95 percent of peak periods in year 2001.

3.2.4 Space allocation by function

(A) Theatre

The WRO study indicated that ten per cent of people travelling in private vehicles and 25 percent of people travelling in charter buses would use the new VRC theatre during the daily peak period (Rouse, 1983, page 46). Based on this information and assuming the proposed VRC will be built to meet peak loads of 269 visitors at a 95 percent level of service in year 2001, it is suggested that the VRC theatre be built to receive 58 visitors at a 95 percent level of service by year 2001.

TABLE 28: VOLUME OF USE OF VRC THEATRE DURING DESIGN PERIOD* IN YEAR 2001 BY LOS

Level of Service	# of People in Private Vehicles**	# of People in Buses	TOTAL
100%	24	38	62
98%	21	38	59
95%	20	38	58

Source: Rouse 1983, page 47.

* Based on a half hour film presentation.
** Revised estimates.

Applying the U.S. National Park Service 0.84 m^2 per person space requirement standard for theatres (Redekop 1983), it was estimated that approximately 49 m^2 were required for public use in the theatre.

(B) Information Desk

A 1978 study conducted at the Yoho National Park west boundary VRC indicated that 33 percent of peopled arriving at that centre made enquiries (Rouse 1983, page 30). Applied to the existing Information Bureau 1982 use data this means that during the half hour peak period, between 23 and 28 people travelling in private vehicles would have made enquiries at the Bureau, depending on the level of service applied. Assuming that the new VRC would have a 27 percent greater attraction capactiy than the old facility, and that 33 percent of visitors travelling in private vehicles and 10 percent of passengers travelling in each type of tour bus would use the VRC information desk (Rouse 1983, page 48), it was estimated that the base year peak hour loading of the information desk would be as follows:

TABLE 29: VOLUME OF USE OF VRC INFORMATION DESK DURING DESIGN PERIOD* IN YEAR 2001

Level of Service	# of People In Private Vehicles**	# of People in Buses	TOTAL
100%	35	42	77
98%	31	42	73
95%	29	42	71

Source: Rouse 1983, page 49.

* Based on a half hour stay.
** Revised estimates.

Once again, based on U.S. National Park Service standards for information area, public use space requirement (1.11 m^2/person) (Redekop 1983) it is estimated that 79 m^2 of space be reserved for the information desk area.

Assuming that other people in the VRC during the peak half-hour period will mainly use the exhibit area of the facility, it is estimated that about 325 m^2 space are required for public use in that area. This estimate is based on a 2.32 m^2/person space requirement criteria used by WRO for such function (Redekop 1983).

Adding up the space requirement totals for the three functions, it is estimated that a 453 m^2 area is required to meet public use space requirements for the proposed VRC.

3.2.5 Parking space requirements

Assuming that 50 percent of people arriving at the proposed VRC site during the peak period in 1982 had not entered the building (Rouse 1983, page 44) and that the average party size per vehicle was 3.2 (Rouse 1983, page 44), it was estimated that 1982 peak period parking requirements called for 49 to 59 private vehicle spaces, depending on the level of service objective. Parking spaces for buses would also be required.

Assuming an average annual growth rate of 1.2 percent in private vehicle traffic to the VRC it was estimated that by year 2001 the following number of parking spaces for this type of vehicle would be required:

TABLE 30: PARKING SPACE REQUIREMENTS FOR PRIVATE VEHICLES IN 2001*

Level of Service	Number of Spaces
100%	74
98%	67
95%	62

* Based on a half hour length of stay.

In addition, based on a 2 percent compound average annual growth rate in bus traffic it was estimated that by year 2001 7 bus spaces would be required in the parking lot.

CASE STUDY - 3

COLUMBIA ICEFIELDS

VISITOR RECEPTION CENTRE

The objective of this case study is to illustrate the type of analysis required to determine the size of a VRC when specific survey data are available. At the project concept planning phase, data from one market survey were used to identify the volume of potential visitors to the proposed facility. At the definition phase, results from another survey were used to prepare a projection of the future volume of VRC users. Two scenarios of growth were presented. This allowed the analysis to determine the square metre requirements of the proposed VRC by functional area for each scenario. One of the scenarios was then selected as the best estimate.

1.0 PROJECT

1.1 Forecast Cost - (1981 $) Class C Estimates

Total	1985/86	1986/87	1987/88	1988/89
2121.0	262.0	1208.0	575.0	76.0

Recurring O&M costs (1981 $) - 75.0

1.2 Planning Phase - Definition

The proposed Columbia Icefields Visitor Reception Centre (VRC) is one of the developments proposed for the second phase of the Icefields Interpretive Management Unit Plan (IMU) which was approved in 1980. Construction of the VRC is expected to start in 1985. The existing Icefields centre does not provide an adequate level of service and the necessary facilities to meet the current volume of visitation and present day visitor interests and expectations. In the meantime, obsolete exhibits and displays in the existing centre will be replaced during phase one of the IMU plan.

1.3 Management Objectives

The proposed Icefields VRC is one of the interpretive developments that will serve to improve levels of visitor demand, accommodate increased visitation and provide more opportunities for visitors to experience the Icefields area according to their levels of interest.

1.4 User Requirements

Although no floor space requirements for the proposed VRC were presented in the April 1981 PIP submission, the document did identify the various services and facilities to be included in the centre. The VRC would contain:

a) information services;
b) site orientation media;
c) a high-use theatre;

d) off-site interpretive exhibits;
e) communication and emergency facilities;
f) washrooms;
g) Icefields (snowmobile) tour concessions;
h) public transit; and
i) interpretive programming (PIP submission, April 1981, page 2).

An analysis of space requirements for the proposed VRC (IBI Group, Visitor Reception in National Parks, National Parks Branch, 1981) suggested that a realistic estimate of visitor use volumes by 1985 called for an approximately 1200 m^2 facility. Broken down by functions, the space requirement was estimated as follows:

TABLE 1: FLOOR SPACE REQUIREMENTS BY FUNCTION

Function	Space Requirement (m^2)	%
Public use areas		
reception/information	227.55	19.4
exhibit viewing	381.3	32.4
theatre	172.2	14.6
Administration and Storage	60.0	5.1
Washrooms and others	335.26	28.5
TOTAL	1176.31	100.0

Source: IBI Group 1981, page 4.

Although the existing Icefields Centre operates only from May to October, operation of the new facility would have to take into account the changes in visitor use initiated by the new Columbia Icefields snowmobile tour concession which would last at least until 1989. The proposed VRC will require a total of 6.5 person-years for the period starting in 1985 and ending in 1989 (PIP Submission, #5, 1981).

2.0 PROJECT CONCEPT

2.1 Option Selection

Three alternatives were presented in the development of the Columbia Icefields Interpretive

Management Unit Concept, of which the proposed VRC was an important part.

One option considered implementing the proposals over a shorter time period, which would have required a greater initial outlay of capital and O&M dollars and staff. If this alternative had been accepted, the proposed VRC would have been built at an earlier date. This option was rejected in the light of the current economical climate and program priorities.

A second option called for no off-site interpretation developments. Since one of the proposed VRC's main functions would be to present interpretive exhibits and presentations, this alternative, if selected, would have significantly decreased the need for a VRC. However, this option was also rejected on the basis of resource inaccessibility, natural hazards, inhospitable weather, public safety concerns, and visitor use patterns.

The selected alternative proposed the implementation of a two-phase project. During the first phase (1981-1985) improvements were to be made to existing facilities, some interpretive exhibits would be replaced, a retail publication on the Columbia Icefields would be prepared, and the experimental Icewalk Program would be expanded. The second phase would include the construction of the VRC and a short scenic walk.

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts   Unavailable

2.3 Visitor Market Forecast

2.3.1 Visitor characteristics

Cars and camper units generally represent close to 90 percent of the Icefields area traffic (Table 2).

TABLE 2: COMPARATIVE BREAKDOWN BY VEHICLE TYPE, 1979

Vehicle Types	%
Bike	3.2
Motorcycle	6.8
Car	54.8
Camper unit	32.5
Bus	1.3
Other	1.6
TOTAL	100.2*

Source: Taylor 1980, page 9.

* Total not equal to 100% due to rounding.

If was also estimated that 1.3 percent of the traffic between June and September 1979 was bus traffic. This means a total of 3,300 buses (about 27 buses per day) pass through the Icefields area during the summer season (Taylor 1980, page 10).

The 1976 and 1980 visitor surveys indicated that over half of the Icefields area visitors were Americans and that the level of visitation by foreigners is increasing.

TABLE 3: VISITOR ORIGIN, ICEFIELDS AREA, 1976, 1980

Origin	%	
	1976	1980
Canada	41.8	32.2
USA	52.1	51.7
Other	5.8	16.1
TOTAL	99.7*	100.0

Source: Taylor 1980, pages 9 and 10.

* Total for 1976 not equal to 100% due to rounding.

Distance travelled in a day by visitors affects the amount of time they have to spend on activities or facilities in a given area. Information on distance travelled by Icefields visitors was collected in 1976 and 1980. As Table 4 illustrates, visits to the VRC involved shorter trips.

TABLE 4: DISTANCE TRAVELLED ON THE DAY TO REACH THE ICEFIELDS AREA

Distance (km)	%	
	1976	1980
0-32	1.7	4.8
32-97	4.4	40.5
97-160	14.1	20.9
160-322	59.1	31.8
322+	20.6	2.0
TOTAL	99.9*	100.0

Source: Taylor 1980, page 12.

* Total for 1976 not equal to 100% due to rounding.

A study conducted in 1978 indicated that the Columbia Icefields is one of the best-known and most visited sites among Banff park visitors (Jacqueline Cheng, 1978). Among the most popular activities in the Columbia Icefields area is a stop at the VRC, a visit to the Glacier, and a snowmobile tour (IBI Group 1981, page 1). People go the the existing centre mostly to view the interpretive exhibits and the slide show, use the washrooms, and seek information (Taylor 1980, page 20).

2.3.2 Visitation trends

Almost 350,000 vehicles passed through the Icefields area in fiscal year 1979-80. This represents more than 875,000 people (Leslie Taylor, Visitor Analysis, Columbia Icefield IMU, Interpretive Planning, WRO, October 1980, page 2). Summer average daily traffic (SADT) figures for the Banff-Jasper Boundary indicated that 2,565 vehicles passed through the Icefields area during the 1979 summer season (Taylor 1980, page 3). Although south-bound traffic exceeds north-bound traffic at the Banff-Jasper Boundary, north-bound drivers are more heavily represented in facility use (Taylor 1980, page 4). This could mean that most park visitors travel from Banff to Jasper, sightseeing along the way. In 1979-80, 72 percent of the traffic in the Icefields area occurred during the June to September summer season (Taylor 1980, page 4). However, winter traffic volumes have increased tremendously since 1970-71 (Taylor,1980, page 5).

With the exception of long weekends, traffic and facility usage is equally distributed between weekdays and weekend days. Turning counts taken at the two Icefields Centre access road intersections indicated that the percentage of traffic turning on each of the access roads from the Trans-Canada Highway (TCH) was 3.5 percent and 13.1 percent respectively (Figure 1) (Taylor 1980, page 7 and 8).

As Table 5 illustrates, use of the existing Icefields Centre has increased significantly from 1978 to 1980, with the largest increase occurring during the shoulder season months.

TABLE 5: MONTHLY VISITATION INCREASE 1978-1980

Months	Total Number of Visits		Variance (%)
	1978	1980	
May	448	1,967	+339.1
June	10,247	22,371	+118.3
July	48,719	52,116	+ 7.0
August	33,278	49,460	+ 48.6
September	8,555	21,599	+152.5
October	1,709	5,446	+218.7
TOTAL	102,956	152,959	+ 48.6

Source: Taylor 1980, page 18.

Average length of stay at the Icefields Centre was estimated to be approximately 15 minutes based on counts done on two days in July 1980 (Taylor 1980, page 20). Loading at the Centre during high use hours was estimated at 127 visitors in June, 286 in July, and 271 in August 1980. The high use hour occurred between 10:00 a.m. and 3:00 p.m., during which 82 percent of daily visitation occurs (Taylor 1980, page 19).

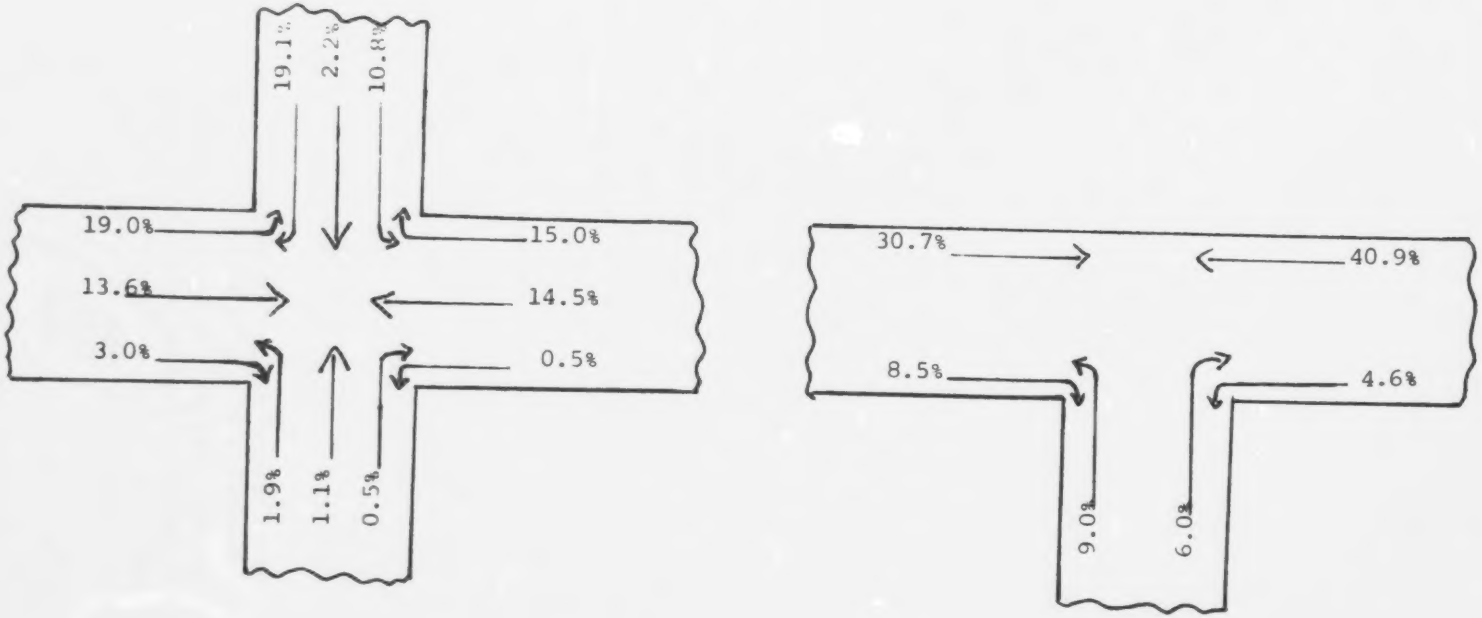
2.4 Life Cycle Cost Analysis   Unavailable

2.5 Estimation of Economic Benefits   Unavailable

3.0 PROJECT DEFINITION

Although no user projections were prepared for the initial project proposal submission, an independent

FIGURE 1: ICEFIELDS CENTRE ACCESS ROAD INTERSECTION COUNTS, 1980



Intersection A

Intersection B

Source: Taylor 1980, page 8.

study of Visitor Reception in national parks incorporated in its report estimates of floor space requirements for the proposed Columbia Icefields VRC as an example of the methods of determining this requirement from user volume data (IBI Group, 1981).

3.1 Evaluation of Socio-Economic Impacts Unavailable

3.2 User Projections

During the May to October 1980 period, visits to the Columbia Icefields area totaled approximately 732,700 people based on a count of about 293,000 vehicles and an estimated occupancy ratio of 2.5 persons per vehicle. Approximately 19 percent of these visitors (140,300 people) made use of the existing Information Centre (IBI 1981, page 1). While overall visitation in the Icefields area had been growing by about 2.6 percent a year over the last three years, use of the existing VRC has been increasing at an 8.8 percent annual rate over the same period. An average peak loading of 286 visitors/hour was estimated for July, the heaviest visitor month of the year. Peak loadings have reached as much as 400 visitors per hour (IBI 1981, page 1).

Based on the above data, and on methodology used by the United States National Park Service, estimates were prepared of current and future space needs for the VRC, which presently provides 350 m^2 of floor space and has frequently been severely overcrowded.

Given the current estimate of 286 visitors per average peak hour and assuming that one third of visitors (or 95 people) would use each of the three major components of the existing VRC at any given time, the following space requirements were estimated. Because VRC visitation increases dramatically during bad weather, 575 m^2 were estimated as being currently required (IBI Group 1981, page 2).

Based on 1980 average peak hour volume of visitation (286 people), two projection scenarios were prepared of future average peak hour use and the corresponding VRC space requirements by 1985.

TABLE 6: ESTIMATE OF CURRENT (1981) SPACE REQUIREMENT BY FUNCTION, ICEFIELDS CENTRE

Function	m^2/Person Standards*	Space Requirements m^2	%
Reception/ Information	1.11	105.45	19.1
Exhibit/ Viewing	1.86	176.70	32.0
Theatre	0.84	79.80	14.4
Administration Storage**		30.00	5.4
Washrooms and other***		160.48	29.1
TOTAL		552.43	100.0

Source: IBI Group 1981, pages 1 and 2.

* Based on U.S. National Park Service space standards.
** Existing space,
*** Five washrooms per sex plus 25% more space for circulation, walls, etc.

The first scenario was based on a low growth projection in the volume of use at the centre. In other words, it was assumed that from 1980 to 1985 the level of visitation to the VRC would grow by an average annual rate of 3 percent, while the market share of the VRC (i.e. the percentage of Icefields area visitors who use the VRC) would remain constant at about 20 percent. As a result it was estimated that average peak hour visitation at the VRC would be 329 persons by 1985. Assuming again that one third of these visitors use each of the three major VRC functions at any given time, the following space requirements were estimated (based on U.S. Park Service m^2/person standards). In other words, based on the first scenario the 1985 VRC would be double the size of the existing Visitor Reception Centre (IBI Group 1981, page 3).

The second scenario was based on a high growth projection of visitation to the VRC. Assuming, once again, a three percent average annual growth rate in visitation to the VRC but assuming a market share increase for the VRC from 20 percent in 1980 to 40 percent in 1985, the average peak hour volume of

TABLE 7: FLOOR SPACE REQUIREMENTS BY FUNCTION COLUMBIA ICEFIELDS VRC, 1985 (SCENARIO I)

Function	Space Requirements m^2	%
Reception/ Information	122.1	17.6
Exhibit/ Viewing	204.6	29.5
Theatre	92.4	13.4
Administration and Storage (doubled)	60.0	8.7
Washrooms and other (wc= 1.5 x current space)	213.5	30.8
TOTAL	692.6	100.0

Source: IBI Group 1981, pages 2 and 3.

visitors at the facility would be 614 persons in 1985 (IBI Group 1981, page 3). Once again, assuming that one third of the visitors use each of the three major VRC functions at any given time, the following space requirement estimates were prepared (based on the U.S. Park Service m^2/person standards).

TABLE 8: FLOOR SPACE REQUIREMENTS BY FUNCTION ICEFIELDS VRC, 1985 (SCENARIO II)

Function	Space Requirement (m^2)	%
Reception/ Information	227.55	19.4
Exhibit/ Viewing	381.3	32.4
Theatre	172.2	14.6
Administration/ Storage*	60.0	5.1
Washrooms and other	335.26	28.5
TOTAL	1176.31	100.0

Source: IBI Group 1981, page 4.

* Double current (1980) space.

Given the likelihood of the new transit/snowmobile terminus being located close to the centre, the second scenario was considered to represent the more realistic estimate of the required floor space for the new VRC.

CASE STUDY - 4

L'ANSE AUX MEADOWS NATIONAL HISTORIC PARK

VISITOR RECEPTION CENTRE

This case study illustrates the role of socio-economic analysis in the review and revision of project requirements at different planning phases. When the original VRC concept was presented very little visitor market data were available. Expected visitor volumes to the site were estimated and space requirements for the facility were provided. Later, at the project definition phase, the project requirements were updated based on a recent visitor survey.

1.0 PROJECT

1.1 Forecast Cost - (1981 $)

Total	Prev.	Current	82/82	83/84	84/85	FY.
3,550.2	777.6	516.0	1,335.2	486.8	313.4	76.0

The distribution of costs is as follows:

Cost Elements	Class of Estimate	(%)
Building	C	(37)
Roads and Parking	B	(31)
Services	B	(14)
Interpretation	C	(10)
Site Development	C	(2)
Project Management	A	(6)
RISK		+12%

1.2 Planning Phase - Predesign

As the location of the only authenticated Viking site in North America, L'anse aux Meadows has been nominated as a World Heritage Site. The site was discovered in 1960 by Helge Instad. As a result of archaeological investigations (from 1961 to 1968) eight Norse Sod houses and a number of artifacts were uncovered. Development of this site is a program priority. Preliminary plans for work to be undertaken over the next five years include the following:

(1) construction of a parking lot and completion of the road to the proposed Visitor Centre;

(2) construction of a power line to the Visitor Reception Centre;

(3) construction of a Visitor Reception Centre with necessary water and utility services;

(4) paving of parking lot and access road;

(5) completion of the interpretation program, based on the recommendations of the International Research Advisory Committee, which reflects the major components of this program are a film which will introduce the visitor to the site, and its significance, as well as a number of thematic

exhibits. Included in these exhibits will be the major artifacts discovered at L'anse aux Meadows, as well as numerous original and reproduction artifacts obtained through Scandinavian sources;

(6) other site development work.

This project is part of an area development plan originally approved in 1974. Through program review the scale of the original project was reduced by thirty percent and the original user requirements revised. It has now received the preliminary approval necessary for design to proceed.

1.3 Management Objectives

Conservation of the remains of the Norse dwellings and artifacts was identified in the themes and objectives as the primary consideration for the site. The entire park is to be devoted to the preservation and explanation of this Norse settlement except for relatively small areas required for visitor services and parking. It is "not the intention to develop any part of the property as a place for physical recreation". A Visitor Reception Centre is to be built to a "good standard of design appropriate to the terrain and site", "befitting an historic site of international significance". The main purpose of the VRC is to "house exhibits and artifacts". Not only the need to conserve the site and artifacts themselves, but also the nature of an archaeological site calls to some extent for an off-site orientation and explanation to the visiting public of the finds, supported by appropriate media.

1.4 User Requirements (rev. 19 January 1982)

The revised user requirements are based on the approved park person-year allotment and on a projected five year peak hour usage rate of 172 persons. Space has been allocated for the following functions:

TABLE 1: FLOOR SPACE REQUIREMENTS BY FUNCTION

Areas	Space Requirement m^2	%
Lobby and reception	74.4	12.0
Sales	14.0	2.3
Exhibits and Displays	209.3	33.9
A-V Theatre	65.1	10.5
Public Washrooms	36.0	5.8
Offices, Workspace and Support Services	107.3	17.4
Mechanical and Maintenance	81.4	13.2
Circulation (5%)	30.0	4.9
TOTAL	617.5	100.0

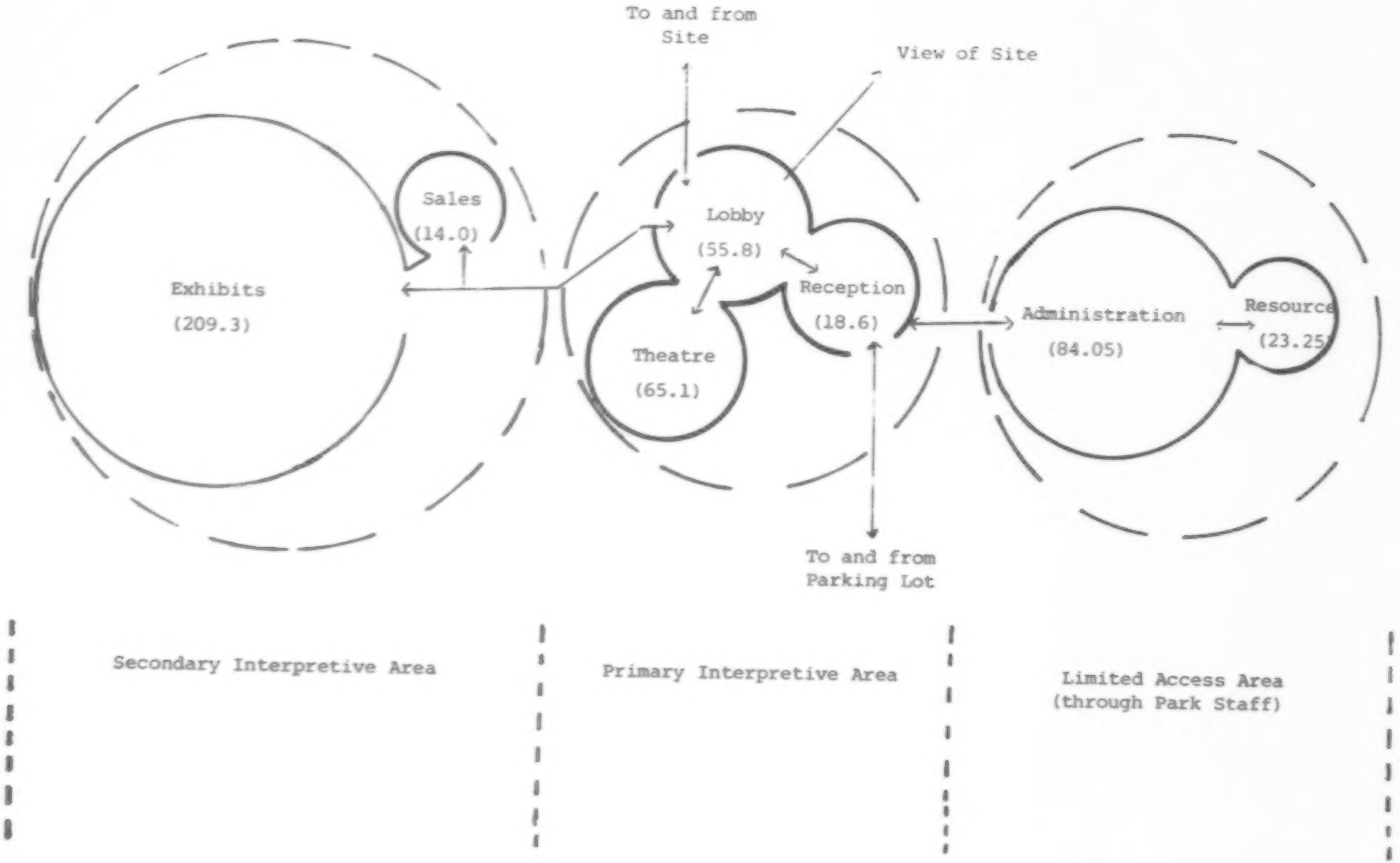
Visitors are expected to pass through the building before and after their visit to the site. There will be essentially free flow between each area of the building. Only interior access will be provided to washroom facilities. A zone approach to security and environmental control will be used. Space estimates for circulation and for electrical/mechanical services have been based on the premise that the halon system can be used for fire protection instead of the sprinkler system requiring space for water storage, which was included in the previous concept.

An access road has to be constructed and all utilities will have to be brought down to the site selected for the VRC. Parking will be provided for fifty vehicles (including five buses and two campers). Any overflow parking will be accommodated on entrance road shoulders. The water supply will be obtained from Black Duck Brook (at 210 LPM with storage for 1100 L). Waste water will be dealt with be means of a septic tank and tile bed.

1.5 Comments

A visitor survey was undertaken in 1980 from which the size and characteristics of the user market were estimated and from which revised user projections were prepared. This information was used to derive the design capacity and to define the functional requirements for the VRC.

Life-cycle cost analysis could have been used when the site was selected and would have resulted in substantial cost reductions.



CONCEPTUAL RELATIONSHIP OF AREAS: L'ANSE AUX MEADOWS VRC

(Areas in m^2)

2.0 PROJECT CONCEPT

The issues of scale and siting were settled when the preliminary development concept was approved in 1974. Tenders were called and received in 1978. In the program review which followed a thirty percent reduction in space was requested. The user requirements were redefined, within program guidelines, and resubmitted for approval.

2.1 Option Selection

Two sites were considered.

(1) Option one provided for the location of the Visitor Centre on a three metre high beach ridge, about 245 metres north of the archaeological site. Access to the Centre would have been via the existing roads to the village of L'anse aux Meadows and Beak Point. Parking would have been located north of the Centre and on the front side of the beach ridge (towards Medee Bay) so as to be screened from the archaeological site. The Centre would have commanded a view of the site with a background of the high rock ridge and of undisturbed landscape.

(2) Option two provides for a Centre located on the lower half of the rock ridge, about 275 metres south of the archaeological site. In this location the Centre would not only provide an excellent view of the archaeological site but also of the Village of L'anse aux Meadows and a generally disturbed landscape. Access to the Centre would require one kilometre of new road construction and a crossing of Black Duck Brook to be built, which would have a major impact on the water regime for the entire area (i.e. an impact on annual flooding and salmon run). Not only the Centre but the required road access, power lines and parking area would have to be placed in an undisturbed portion of the Park.

The selection of option two was based largely on input from the International Research Advisory Committee (Minutes, June 1973, Section 11, p. 7) which required that:

"(a) if possible, the interpretation centre should be on a relatively high point of ground providing a view of the archaeological remains, the sea, and the reconstructed buildings; and

(b) parking facilities should not be visible from the site or reconstruction."

When the Area development plan was approved (17 September 1974), initial estimates of 10,000 visitors by 1982 were considered to be too optimistic and, that due to uncertainty of future visitation figures, it was recommended that they not be used to substantiate the scope of future development. A 500 m^2 Visitor Centre was proposed of which approximately 330 m^2 was to be devoted to the storyline prepared by Dr. Bengt Schonbeck. Parking for forty vehicles was to be provided.

2.2 Preliminary Screening of Adverse Socio-Economic Impacts Unavailable

2.3 Visitor Market Forecast

The visitor use forecast was based on preliminary projections prepared for Gros Morne National Park in 1972 (Table 2). It was assumed the Great Northern Highway would not be reconstructed and paved until 1982. A set proportion (ten, fifteen, and twenty percent, with a five year lag) of the projected visitors to Gros Morne were also expected to visit L'anse aux Meadows. The average party size was initially expected to be higher (4.5 persons) because of heavier visitation from within Newfoundland, and later to be 3.5 persons. The peak day was expected to be 140 percent of average and the peak hour to be thirty percent of daily visitation. Visitors were expected to spend three hours on site. Based on experience with other National Historic Parks, and L'anse aux Meadows isolated location, visitation to the site was expected to reach its maximum level within five to ten years.

This initial forecast was updated for the Preliminary Development Concept prepared by H.J. Porter and Associates in 1976. Based on the revised medium forecast, and using 1985 as the design year, the Visitor Centre was expected to receive a peak hour usage of 84 persons on a peak day. Parking for forty vehicles was recommended. As well, it was thought that the water supply should be adequate to meet the needs of 600

TABLE 2: ESTIMATED VISITATION TO L'ANSE AUX MEADOWS, 1972

TIME	ESTIMATE	NUMBER OF VISITORS	VISITORS PER DAY		VISITORS AT ONE TIME PEAK HOUR		PARKING SPACES REQUIRED PEAK HOUR	
			AVERAGE DAYS	PEAK DAYS	AVERAGE DAYS	PEAK DAYS	AVERAGE DAYS	PEAK DAYS
1985	Low	9,900	100	140	30	40	9	12
	Medium	15,000	150	210	45	65	13	18
	High	25,000	250	350	75	105	21	30
ULTIMATE 1991	Low	40,000	400	560	120	170	34	48
	Medium	60,000	600	840	180	250	51	72
	High	100,000	1,000	1,400	300	420	86	102

visitors, the maximum daily usage the Centre was expected to receive over the period of the forecast.

2.4 Life Cycle Cost Analysis

Although a life cycle cost analysis was not undertaken, the siting options were costed. Option two, which was recommended on the basis of the International Advisory Committee's criteria (and accepted by the ADM) was estimated to be twice as costly. The main differences in the initial cost estimates were in building construction (1.25 x), landscaping (2.4 x), and the completion of an access road, bridge, and utilities (7.1 x). As well, the proposed location of the Visitor Centre on a rocky outcrop has resulted in other problems. The buildings foundations have to be designed with the fact in mind that the rock is susceptible to swelling. Parking has to be screened from the site. Traffic and circulation patterns are unnecessarily extended: a ninety to 120 metre walk from parking to the Centre, and a 365 to 455 metre walk to the site. As well, the proposed location is subject to high winds and drifting snow in winter. These factors will contribute to increasing the cost of design, construction, and operation of the Visitor Centre.

2.5 Estimation of Economic Benefits Unavailable

3.0 PROJECT DEFINITION

Program review of cost estimates based on the 1978 Design Brief resulted in direction being given to the Region to reduce space requirements by thirty percent.

The Area Superintendent requested that a visitor survey be undertaken in 1980 because of uncertainty about the size and characteristics of potential user groups. Revised user projections were also to be prepared for the proposed Visitor Reception Centre because of expressed concern that the proposed design requirements no longer had any relationship to the expected usage of the Centre.

3.1 Evaluation of Socio-Economic Impacts Unavailable

3.2 User Projections

Newfoundland is physically isolated by hundreds of kilometres of open water. The main link with the mainland for park visitors is the car ferry to Port aux Basques. Because ferry service often involves long delays, the air mode is favoured by three times as many visitors as other Atlantic Provinces, but most air visitors (over eighty percent) are destined to the Avalon Peninsula. Newfoundland has a relatively strong VER (visiting friends and relatives) market. Newfoundlanders themselves, because of their isolation, tend to travel a great deal within their own province. One out of three residents, eighteen years of age and older, took at least one overnight trip away from home in 1977. Of these [illegible]s, 85.3 percent were to destinations within the province. (Deloitte Haskins and Sells, 1980).

Western Newfoundland and the Northern Peninsula are becoming attractive tourist destination areas. Almost twenty per cent of the non-resident auto parties visited friends and relatives within the region. Visiting friends and relatives accounted for 77.8 percent of the domestic trips. It is also worth noting that 57.7 percent of local trips are within the region. However the region is sparsely populated. A small base population will not support continued growth in this tourist market. Sightseeing was a relatively more

TABLE 3: WESTERN NEWFOUNDLAND AND THE NORTHERN PENINSULA VISITOR MARKET

(A) VISITORS (%)	DOMESTIC	NON RESIDENT	
		Auto	Air
Party Nights	17.7	31.5	3.1
Visits/Trips	20.8	41.4	2.1
(B) LENGTH OF STAY (nights)	**DOMESTIC**	**NON RESIDENT**	
		Auto	Air
Average	4.5	8.8	6.4

Source: Tourism Newfoundland - 1977/78 Domestic Travel Survey, 1979 Non Resident Auto-Exist Survey, and 1980 Air Exit Survey important trip purpose for non-resident visitors (65.9 percent) than for resident visitors (41.4 percent). Visits to historic sites (14.4 percent), however, were more important than visits to national parks (7.4 percent) as a trip purpose for resident visitors.

L'anse aux Meadows National Historic Park is 663 kilometres by road from Port aux Basques (434 kms. from the Trans-Canada Highway at Deer Lake) The trip from St. Johns via the Trans-Canada and Great Northern Highway (430) is over 965 kilometres. The only settlements within forty kilometres of the park are St. Anthony's, the site of the Grenfell mission, and several small outports. Pistolet Bay Provincial Park, which opened in 1974, provides camping (about 30 sites). At St. Anthony's, which is about 11.25 kilometres east of the turnoffs to the Park, there are two motels (about forty units), and several tourist guest homes. Another motel (thirty units) is located about 7.5 kilometres west of the turnoff. Various sections of the Northern Highway and Park access roads are still under construction. Recently a regional development plan was prepared for the St. Anthony's area which will guide future tourist development.

In 1978 L'anse aux Meadows was nominated to the World Heritage List. A park visitor survey was conducted in 1980, the year L'anse aux Meadows was recognized in a UNESCO ceremony (July 11, 1980) as a world heritage site.

As expected, the majority of visitors were from Newfoundland. Only twelve per cent of the visitor parties originated within the Northern Peninsula. The average length of stay in the Northern Peninsula was 5.9 nights. Thirty-four percent of the visitor parties gave L'anse aux Meadows as the main reason for their visit to the St. Anthony's area. Fifty-five percent of the visitor parties had visited Gros Morne on the way (over eighty percent of mainland and American visitors). For most visitor parties this historic park was one of several planned stops. Seventy percent of the visitor parties were on a trip lasting four or more days.

The main source of information used to plan the trip, not surprisingly, was the media. Other visitors and schools were next in importance as sources of information.

TABLE 4: ORIGIN OF PARK VISITOR PARTIES

Origin	(%)
Newfoundland	61
Other Canadian	25
(Ontario)	(15)
USA and Other	14
TOTAL	100

Source: 1980 NHP Visitor Survey

TABLE 5: TRIP DESTINATION

L'anse aux Meadows	%
Main destination	24
One of several planned stops	70
An unplanned stop	6
TOTAL	100

Source: 1980 NHP Visitor Survey

TABLE 6: MAIN SOURCE OF INFORMATION USED TO PLAN THE TRIP

Information Source	%
Media	48
(Radio/TV)	(26)
(Print)	(22)
Other Visitors	24
Schools	10
Provincial Tourist Bureaus	6
All other sources	12
TOTAL	100

Source: 1980 NHP Visitor Survey

Three quarters of the visitor parties arrived on-site by car. The average party size was 3.4 persons.

TABLE 7: MODE OF ACCESS

Transportation Mode	%
Cars	80
(with trailers)	(4)
Recreational Vehicles	17
Buses	3
TOTAL	100

Source: 1980 NHP Visitor Survey

Forty-two percent of the visitor parties were families with children.

During their stay in the area, most of the visitor parties used local campgrounds. Pistole Bay was the most popular with 26 percent of the parties. A surprising percentage of the parties (9 percent) simply camped along the road. Only seven percent of the parties, however, said they had any difficulty getting the accommodation they wanted.

TABLE 8: ACCOMMODATION USED DURING VISIT

Accommodation Used	%
Camping	47
Commercial Roofed	40
Private Homes	13
TOTAL	100

Source: 1980 NHP Visitor Survey

Preliminary user projections based on initial returns from the 1980 NHP Visitor Survey were prepared. During the survey hand counts were taken at the temporary visitor centre and parking lot. Although L'anse aux Meadows had not experienced significant growth in visitation before 1978 (under five thousand visitors per year), increased media exposure resulted in substantial increases in visitation, peaking in 1980, when over 1,000 persons were on site during the UNESCO ceremony on July 11th. Eliminating the extreme peaking, which occurred the day of the ceremony and the three following Sundays, 1980 was used as a base year for five year projections. The preliminary analysis was based on the following usage factors and assumptions:

(1) a hundred percent pull-off rate;

(2) a party size of 3.6 persons;

(3) a thirty minute visit to the temporary Visitor Centre;

(4) a peak hour arrival rate of twenty percent during the week and twenty-five percent on Sunday); and

(5) a doubling in visitation and duration of the visit (which will include a 15 minute a-v presentation by 1985).

TABLE 9: PROJECTED PEAK HOUR VISITOR CENTRE USAGE

Persons	Peak Hour 1980	Peak Hour 1985
Average Day	17	68
Peak Day	43	172

Based on an average stay on-site of one hour, parking for fifty vehicles would have to be provided.

These projections were used for preparation of the design brief in which the following changes were made:

TABLE 10: VRC DESIGN REQUIREMENTS

	Space Allocation (m^2)	1974	1978	1982
(A)	Lobby & Reception	70.2	119.0	74.4
	Exhibits & Displays	232.5	279.0	209.3
	Theatre	30.2	30.2	65.1
	Washrooms	23.3	43.3	36.0
	Other	193.8	491.8	232.7
	TOTAL (m^2)	550.0	963.3	617.5
(B)	Parking (spaces)	40	25	50
	(oversized)		(5)	(7)
(C)	Water Supply and Waste Disposal	- unchanged -		

Since the peak year of 1980, during which 14,500 persons visited L'anse aux Meadows, visitation declined somewhat but has begun to recover. In 1982, 11,700 persons visited the site. Revised user estimates were prepared for 1982, after the results of the visitor survey were compiled which showed that the preliminary projections used for the design brief are still in the ballpark.

TABLE 11: ESTIMATED PEAK HOUR USAGE OF THE L'ANSE AUX MEADOWS VRC (1982)

Persons	Peak Hour
Average Day	45
Peak Day	131

Source: 1980 NHP Visitor Survey

Several differences and additional findings are worth noting. Visitors stayed over an hour on site (78 minutes on average). Only 91 percent of the visitors either used or planned to use the Visitor Reception Centre. Local and repeat visitors were less likely to use the temporary VRC. Almost half of the visitors from outside the area who did not use the existing Centre, did not know it was there. Visitors spent almost one-half hour in the Centre. Existing media were able to attract and hold the attention of almost all of the potential audience. Most parties' visits to the Centre were well structured following the layout of the media. The average span of attention for the media was 4.6 minutes, with the exhibit on Viking Life attracting the greatest interest (9.4 minutes viewing time per party). Improvements in the media are likely to be appreciated by the visiting public and increase the duration of their visit to the Centre. Almost ninety percent of the parties also visited the archaeological site and reconstructed Norse Sod Huts. The main reason that most parties did not visit the archaeological site was either poor weather or they had already seen it. The Norse huts received the highest rating of any facility in the Park.

CASE STUDY - 5

INGONISH

VISITOR RECEPTION CENTRE

The following case study is a good example of the role socio-economic analysis can play in the selection of the best project option. The alternatives contemplated for this project concerned the type and location of development that would take place.

A visitor market analysis, using secondary source data, helped determine the best development option for the VRC project by identifying the type and size of the market each project option would and could satisfy. Once the choice of the best option was made a user projection analysis was conducted to estimate the building design capacity, parking and washroom requirements.

1.0 PROJECT

1.0 Forecast Cost - (1982 $) Class E Estimate

Total	Prev.	83/84	84/85	85/86	86/87
1431.2	5.0	31.9	35.7	697.0	661.6

1.2 Planning Phase - Predesign

The project is part of an area development plan which was approved by the region in 1982. As a result, the scope of work and phasing of the project was revised. The project has received the preliminary departmental approval necessary for design to proceed.

1.3 Management Objectives

The primary purpose of the building is to orient the visitor to the Park and its facilities, and to provide information on park programs and services. It replaces an existing facility which is quite old, dating back to the establishment of the park, which is no longer large enough to handle existing or expected park visitation, and which does not meet the Parks' current operating requirements.

1.4 User Requirements (10 November 1982)

The new building will provide increased display space, an a-v theatre, and better washrooms with access for the handicapped.

TABLE 1: FLOOR SPACE REQUIREMENTS BY FUNCTION

Area	Space Requirement m^2	%
Lobby/Lounge/Exhibit area	93	38
Theatre (flex space)	56	23
Washrooms	56	23
Service areas (storage janitorial, utilities)	18	7
Waste space (plus 10%)	22	9
TOTAL	245	100

The reception area will accommodate up to 100 visitors and the theatre up to fifty visitors at a time. Parking spaces for twenty cars and up to five buses or recreational vehicles will be provided.

A maximum of three staff will be required to operate this visitor reception facility. It will be open from mid-May to mid-October, with normal hours of operation from 8 a.m. to 9 p.m. daily.

1.5 Comments

A market analysis and user projections were prepared to support this development. The facility will serve new arrivals, visitors staying in nearby accommodation, and bus tours. Five and ten year user projections were prepared to estimate floor space, parking, and water service requirements.

2.0 PROJECT CONCEPT

In the 1971 Interim Park Master Plan a combined administrative/visitor reception centre was proposed to be built in the existing Headquarters area. This facility would have provided 930 m^2 of floor space, and parking for forty passenger vehicles, seven pull through spaces for oversized vehicles and one or two spaces for buses. The Headquarters area is a very good site for a visitor reception facility, because it is highly visable from the Cabot Trail and located before the Keltic Lodge/Ingonish turnoff. However, preliminary site plan investigations showed that new services were required and that there was no room for future parking expansions. As well as being potentially the most expensive option to pursue, it did not allow for phased development. The general works function would have been split between the proposed administrative building and compound which are located at different sites.

The 1977 Operations Review approved a change in the development concept recommended by the Headquarters area study team. A new administrative building, providing approximately 415 m^2 of floor space and parking for 24 cars, would be built in the vicinity of the existing compound. The existing administrative building would be retrofitted as an information outlet and for display purposes. Further project planning was postponed. In the meanwhile a park visitor use survey and water service investigations were approved to meet planning information needs. Redesign and realignment of the Cabot Trail in this area was also approved.

When this project was brought forward for management review in 1980, the Park presented another development concept for analysis. This proposal called for the expansion and retention of the existing administrative building in its present use, and the retrofitting of the existing stone entrance building as an information and orientation facility. In order to provide the extra space required, the washrooms would have to be removed from the stone entrance building and placed in the western parking lot.

During regional review two other options were discussed. The North Bay day use area was developed in the early 1970's to take the overflow from Ingonish Beach. However, because visitor use had not grown to the extent anticipated, and the facilities at North Bay were likely to remain underused for the foreseeable future, it was suggested that the D'hont property at North Bay be redeveloped as an administrative office complex. The other suggestion was that if a new VRC was to be built on the Cabot Trail, another site south of the present entrance way, on the shore of the Freshwater Lake, be considered.

2.1 Option Selection

Three options were selected for regional management review:

(1) retrofitting of the Stone Entrance Building;

(2) conversion of the Headquarters Area Administration Building; and,

(3) construction of a new Visitor Reception Centre by the Freshwater Lake.

The main issues raised at the time were the need to upgrade the visitor reception function in the Ingonish area, the availability of adequate floor space within existing buildings, the amount of parking needed for cars and buses, the need for additional washrooms, and the need to upgrade existing water services. Option (3) was selected for further development.

2.2 Preliminary Screening of Adverse Socio-Economic Impacts Unavailable

2.3 Visitor Market Forecast

A major management concern was the adequacy of each of these planning options given long term trends in park visitor use, especially bus tour traffic.

In absolute terms, Cape Breton Highlands National Park is one of the most heavily visited parks in the system. An analysis of growth in park visitation, entrance traffic counts, showed that the rate of growth was levelling out. Between 1953 and 1966, visitation grew at a rate of 17.5 percent per year. From 1966 to 1971 visitation actually declined eight per cent. When the effect of Expo year was removed (a twenty percent decline in visitation in 1967) the growth rate during this period had actually been 3.5 percent per year. In the period just preceeding the energy crunch (1972-73) the growth rate was 2.2 percent per year, and since that time (from 1974-78) growth in visitation had been less than one percent per year (0.7 percent). It was therefore apparent on the basis of this analysis that the Park was likely entering a period of no growth. (Figure 1.)

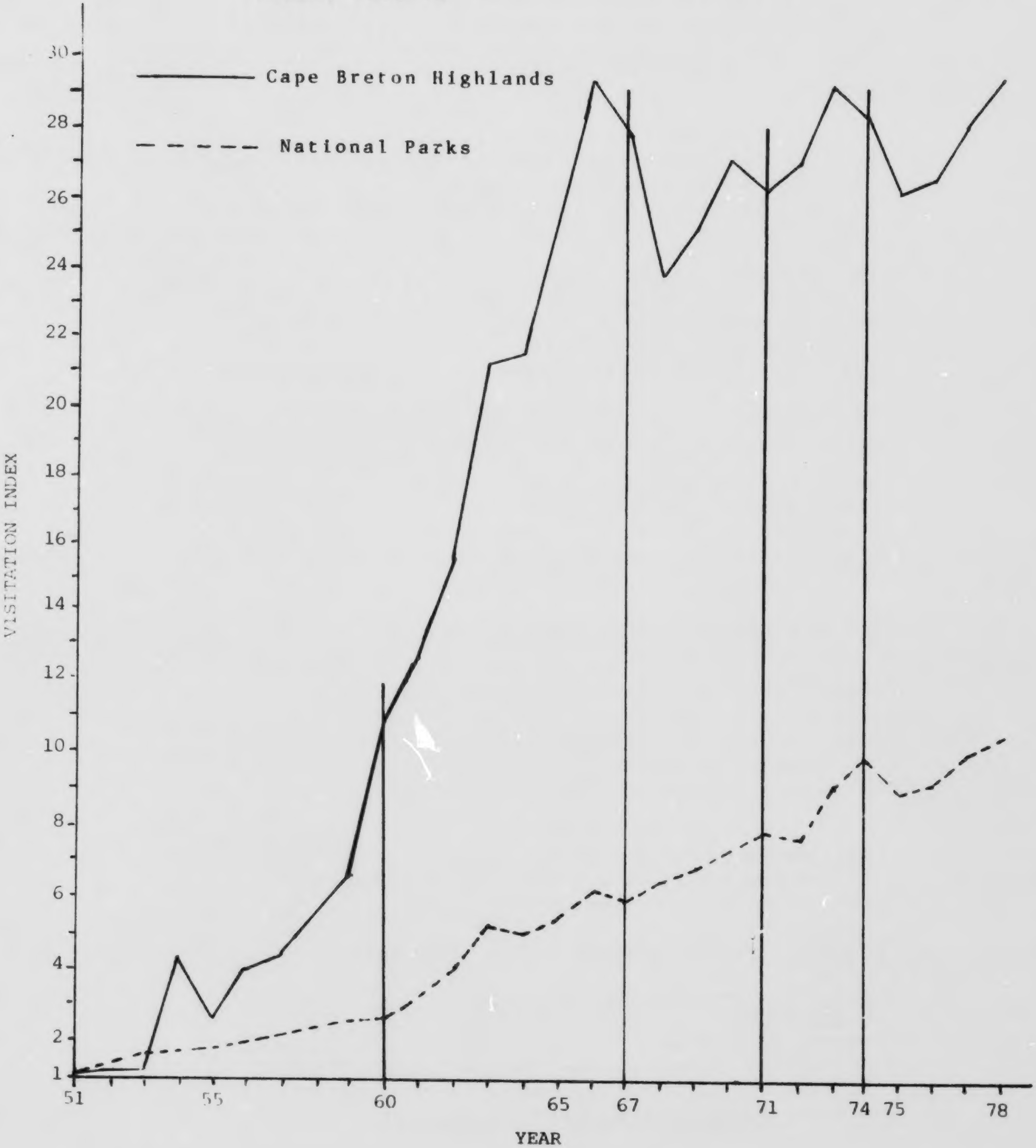
Approximately 65 percent of vehicles enter the Park at the Ingonish Entrance. Only one third of these vehicles, however, contain first time visitors to Cape Breton Highlands. When the traffic partition factors derived from the 1978 Park Visitor Survey were used to identify the visitor components of traffic entering and leaving CBH for the final time at Ingonish and Cheticamp, a different picture emerged.

TABLE 2: VISITOR TRAFFIC AT PARK ENTRANCE (percent)

Entry	Exit		Total
	Ingonish	Cheticamp	
Ingonish	42	58	40%
Cheticamp	96	4	60%
TOTAL	75	25	100%

Source: CBH Park Visitor Survey, 1978.

FIGURE 1: A COMPARISON OF VISITATION TO CAPE BRETON HIGHLANDS NATIONAL PARK AND ALL NATIONAL PARKS, 1950-79



Source: Visitor Research, Atlantic Regional Office

Most sightseers, including bus tours, entered the Park at Cheticamp and left by way of Ingonish. The percentage of local and day use traffic (most of it destined to Ingonish Beach) was higher in the Ingonish area. Although bus tour traffic had steadily increased, only one or two bus tours a day usually entered the Park at Ingonish during the peak season.

Trends in the usage of nearby accommodation likely to influence the usage of visitor reception facilities in the Ingonish area were also reviewed. Although the number of party nights spent in Park campgrounds had increased at the rate of six percent over the four preceeding years (1976-79), when 1969 and 1979 were compared it was apparent that the number of party nights spent in the Park had actually declined almost twenty percent.

TABLE 3: PARTY NIGHTS SPENT IN PARK CAMPGROUNDS

Campground	Percentage Increase or Decrease	
	1969-1979	1976-1979
Ingonish	-22	-4
Broad Cove	-20	-3
Black Brook	- 8	-11
Cheticamp	-40	+58
Primitive Sites	+100	+36
AVERAGE	- 19	+6

Source: Park Use Statistics

Although usage of park campgrounds along the Ingonish sector of the Cabot Trail had declined, over seventy percent of the party nights were spent and most of the site capacity is still found on the Ingonish side of the Park.

The proportion of visitors who stay in the vicinity of the Park had increased from 54 percent in 1971 to 69 percent in 1978 but a greater proportion of them stayed in private accommodation outside the Park.

TABLE 4: ACCOMMODATION USAGE (PERCENTAGE)

Type of Accommodation	1971	1978
Campgrounds	64	60
Commercial Roofed	30	27
Private Home/Cottage	6	13

Source: Parks Canada Visitor Surveys

Several basic trends in growth and composition of the park visitor market were also evident. First, there had been a substantive increase in the percentage of Canadian visitors. Almost one quarter of the park visitors came from Nova Scotia (11.7 percent from the island of Cape Breton itself). During the same period of time the average length of stay of park visitors had also declined substantially. Although the average party size had remained relatively stable (3.2 persons) due to increased usage of the Park by local visitors, it was expected to decline because the average household size was expected to decline in the future.

TABLE 5: ORIGIN OF PARK VISITORS (PERCENTAGE)

Origin	1962	1971	1978
Canada	38	43	69
USA and Foreign	62	57	31

Source: Parks Canada Visitor Surveys.

TABLE 6: AVERAGE LENGTH OF STAY OF PARK VISITORS (DAYS)

Average Stay	1962	1971	1978
Days	4.6	3.4	2.0

Source: Parks Canada Visitor Surveys

In 1978, the Ingonish Stone Entrance Building attracted a greater proportion of the users of these facilities than the Cheticamp Visitor Reception Centre.

TABLE 7: CHARACTERISTICS OF VISITOR PARTIES USING VRC FACILITIES IN CBH NATIONAL PARK (PERCENT)

VRC Facility	Total	Overnight Visitors	Day Users	First Visit	Repeat Visit
Ingonish	29	38	17	32	24
Cheticamp	23	33	12	28	16
TOTAL	52	71	29	60	40

Source: 1978 CBH Park Visitor Survey

Even though Ingonish attracted a greater percentage of park visitors, the actual number of enquiries or visits at Cheticamp was higher. Over fifty percent of the visitor parties nevertheless made use of these facilities. Overnight and first time visitors were disproportionately represented among the users.

The siting of the Visitor Centre relative to local accommodation was expected to influence the extent to which it was used. Cheticamp attracted a greater proportion of the visitor parties staying in nearby park campgrounds, while Ingonish drew a greater proportion of the visitor parties staying at Keltic Lodge and in both commercial and private accommodation outside the Park.

TABLE 8: PROPORTION OF VISITOR PARTIES STAYING IN EACH TYPE OF ACCOMMODATION USING VRC FACILITIES IN CAPE BRETON HIGHLANDS NATIONAL PARK (percent)

VRC Facility	Total	Park Campground	Motel/ Cabin	Keltic Lodge	Private Home/ Cottage	Campground outside Park
Ingonish	29	38	38	54	37	30
Cheticamp	23	44	34	10	11	11
TOTAL	52	82	72	64	48	41

Visitors using the Broad Cove Campground were the most likely of any of the campers to have used the information and orientation facilities.

The Cheticamp Visitor Centre Study (1978) was also used as a benchmark to clarify some of the implications of the options that were being discussed. Most of the visitor parties who used the facilities during the peak summer months would stop within an hour of arrival. Within a day of arrival, one out of ten of the parties who used the facilities would return for a second visit. The average visitor party would spend between fifteen and thirty minutes at the VRC. Eight out of ten of the visitors would be looking for either information or directions when they stopped at the facility. About four out of ten of the visitors would likely use the facility as a rest stop and would probably want access to washroom facilities. The difference in usage between a VRC with or without exhibit and display space, would likely be minimal. However, a greater audience is likely to be exposed to the significant interpretive messages of the Park than any equivalent combination of media with the possible exception of road side pull-offs. Moreover, the results of the Cheticamp VRC Study indicated that almost half of the visitor parties changed their plans of what to see in the Park as a result of visiting the VRC.

Cape Breton Highlands has reached a stable period of growth characteristic of an older park. Because of its distance from major population centres, the Atlantic Region should become an increasingly important source of visitors. A short-run decline in the length of stay of overnight visitors and an increase in the number of day excursions to the Park was expected. Over the long-term the number of automobile touring parties (who only stop-over in the Park), and the average party size, were bound to decrease. At the same time, the average length of stay, the number of Park-destined trips, and the amount of bus traffic should increase.

If the entrance kiosk was retrofitted as an basic visitor reception facility and if washroom facilities were placed on the other side of the Cabot Trail then pedestrians crossing the road would create safety and circulation problems. Not enough space was available within the stone kiosk (40 m^2) to accommodate any increase in use nor was adequate space available on-site for any parking expansion. Moreover, a single bus tour stopping at the facility would likely overload it.

2.4 Life Cycle Cost Analysis Unavailable

2.5 Estimation of Economic Benefits Unavailable

3.0 PROJECT DEFINITION

Management chose conversion of the administration building and construction of a new visitor reception facility on a site south of the entrance way, near the Freshwater Lake, for further planning consideration. The stone entrance building was rejected because of inadequate floor space and toilet facilities, insufficient parking and hazardous pedestrian access. Only a basic information and orientation facility was to be proposed.

Visitor use projections were to be prepared to estimate the building design capacity, parking and washroom requirements.

3.1 Evaluation of Socio-Economic Impacts Unavailable

3.2 User Projections

In order to estimate the usage of the proposed Visitor Reception Centre for the Ingonish area, the following procedures were used:

(1) based on traffic patterns over the preceeding fifteen years, five and ten year traffic projections were prepared for each month of the visitor season;

(2) the average number of enquiries at the existing Ingonish information facility for the period 1976 to 1979 was used to estimate the pull-off rate in the base year of the projections and a standardized rate derived from the usage of the Cheticamp Visitor Centre was used for the five and ten year projections;

(3) the peak hour was derived from the survey of the Cheticamp Visitor Centre during which it was assumed approximately fifteen percent of the users would arrive;

(4) based on the actual usage of the Cheticamp Visitor Centre, if the major emphasis was on information, orientation and rest stop facilities the proposed Ingonish Centre would have an attractivity rate of .758 (of the visitors would use these facilities);

(5) based on the usage of the Cheticamp VRC it was assumed that approximately forty per cent of the visitors would want to use the washrooms;

(6) separate projections for bus tours were prepared based on the period 1976 to 1979 and on the assumption that thirty percent would enter the Park at the Ingonish entrance;

(7) the average party size used for the base year of the projections was 3.2 persons, and for the five and ten year projections was assumed to be 2.8 persons (the preliminary estimate used for the 1980 Census household size); and,

(8) based on the growth rate evident in the average tour bus party size reported in provincial tour bus surveys and at other parks where records were kept, it was assumed that the average bus party would be comprised of 40 persons in 1980, 45 persons in 1984, and 55 persons in 1989.

TABLE 9: PEAK HOUR ARRIVAL RATE OF VEHICLE PARTIES AT INGONISH VISITOR CENTRE

(A)	Passenger Vehicles	1980	1984	1989
	Daily	17	21	20
	Weekend/Holidays	19	17	24
	Weekdays	15	25	24
(B)	Buses	1980	1984	1989
	Daily	1	2	4
	Weekend/Holidays	1	3	5
	Weekdays	1	2	3

Peaking in the arrival rate of passenger vehicles was expected to occur in the order 1.2 x on about five to ten days during the visitor season. This meant that on a peak August weekend a maximum of 36 passenger vehicles would arrive with between nine and eighteen being found in the parking lot at any one time Although steady growth in the number of bus tours was projected, the majority of the tours would still enter the Park at Cheticamp, and might stay over in the Ingonish area or use the Visitor Centre as a rest stop. This Visitor Centre would unlikely ever be a major bus tour facility. A maximum of five buses would arrive during an hour, with only one or two being found on-site at any one time. The peak arrival hour could not be determined on the basis of available information, however, it was thought unlikely that peaks in the arrival rate of passenger vehicles and buses would coincide.

TABLE 10: PROJECTED NUMBER OF PERSONS USING THE INGONISH VISITOR CENTRE AT PEAK HOURS

		1980	1984	1989
(A)	Visitor Parties			
	Daily	55	60	55
	Weekend/Holidays	60	50	45
	Weekdays	55	70	65
(B)	Bus Parties			
	Daily	40	110	220
	Weekend/Holidays	40	135	275
	Weekdays	40	90	165

Even though relatively few buses would likely stop at this facility, during peak hours the majority of users would likely be from bus tours and if the arrival of bus(es) coincided with a busy period a major surge would occur. A minimum of 25 persons and a maximum of 160 persons would likely use the Centre during peak hours.

The projected peak daily washroom usage was 470 persons (a maximum of 75 persons per hour).

CASE STUDY - 6

FORT ANNE NATIONAL HISTORIC PARK DEVELOPMENT

VISITOR RECEPTION CENTRE

This case study illustrates how socio-economic information can be used to identify and clarify particular problems related to a proposed development plan. Estimates of the number of parking spaces required were prepared. The effect of having a long walking distances from the parking lot to the site was also evaluated.

1.0 PROJECT

1.1 Forecast Cost - (1983 $) Class C and D Estimates

Total	Current	83/84	84/85	85/86	86/87	87/88	Fut.
3,996.7	47.5	150.0	86.1	961.6	1,919.2	770.5	61.8

An additional $100.0 (and 4.08 py) will be required to meet additional O&M and salary costs, once the Visitor Reception Centre becomes operational.

1.2 Planning Phase - Concept

This project is part of a Management Plan scheduled for final review and approval by the Minister in 1983/84. The best planning options, approved for presentation to the public in March 1982, call for the removal of modern day intrusions from the grounds as well as for the restoration and period interpretation of the Officers Quarters. As a result, a building has to be constructed or renovated off-site which will provide sufficient space for park administration and maintenance, visitor services such as orientation and information, public washrooms, an a-v theatre, artifacts, exhibits and displays. Three visitor centre/parking options were presented for public consideration:

(1) renovation of the Town Hall;

(2) renovation of the County Court House; and

(3) construction of a new Visitor Centre on the Texaco property.

Preliminary Treasury Board approval was given ($268.0 in 1982 constant dollars) for the design of the building, parking and interpretive requirements. Approval-in-principle of the overall project concept was requested and received.

1.3 Management Objective

Fort Anne was the first National Historic Park and its restoration is being undertaken as a Parks Canada Centennial project. The primary historic theme to be presented is Anglo-French rivalry in North America during the late seventeenth and early eighteenth century (especially the period from 1702 to 1749). Secondary themes include Fort Anne as the capital of Nova Scotia, and the design, construction, and development of the Fort itself. Due to the complexity of the site and its historic resources which date from many different periods, the visitor will need a proper orientation to the grounds on arrival. Visitors should be able to park, walk to the Visitor Reception Centre, obtain the necessary information and orientation, then proceed directly from the buildings to the grounds. Storylines for all three themes (and the first two exclusively) will be presented in the Visitor Centre through displays using models, artifacts, drawings and maps. Guides will assist visitors by answering any of their questions. The design, construction and development of the Fort itself will be represented on-site through restoration of surviving buildings such as the Officers Quarters and the Powder Magazine. The parking lot in front of the Officers Quarters, which obstructs the view of the building, will be removed and the colonnade on the Parade Square side of the building will be reconstructed. British military life will be presented through period interpretation at the Officers Quarters.

1.4 User Requirements (February 2, 1983)

Anticipated requirements are based on a 1995 design year. Space has been allocated for the following functions:

TABLE 1: FLOOR SPACE REQUIREMENTS BY FUNCTION

Area	Space Requirement (m^2)	%
Lobby, Reception, Exhibits, and Displays	154.3	25.9
AV Theatre	111.5	18.7
Public Theatre	32.4	5.4
Offices, Workspace, Support Services	119.9	20.1
Mechanical and Maintenance	58.5	9.8
Circulation (approx. 25%)	119.2	20.0
TOTAL	595.9	100.0

A parking lot will be purchased at the corner of Victoria and St. Anthony Streets, about two blocks from the site of the proposed VRC, which will replace the parking spaces that will be removed from the Parade Square.

2.0 PROJECT CONCEPT

Annapolis Royal is the oldest town in Nova Scotia and prior to 1750 it was the provincial capital. It possesses an unusual number of outstanding and well maintained Victorian buildings. The Town Council, local merchants and the Development Commission are interested in heritage conservation and wish to develop this potential as a tourist attraction significant enough to require at least an overnight stay if not an extended visit. Their application for funds available for the Annapolis Basin Destination Area under the DREE Tourism subsidary agreement was approved in 1979. Three quarters of the 2.2 million dollars allocated will be spent on heritage conservation and improvements to the town core over a period of four years. These improvements include: restoration of the Main Street facade, Market place, and the Knas Theatre (Farmers Hotel); as well as construction of a public garden and scenic boardwalk.

The Development Commission initially favoured a joint Visitor Reception Centre meeting the needs of both the Town and the Fort. Its preference was the Farmers Hotel. Parks Canada had no objection to sharing such a facility with the Town providing Parks Canada could meet its own operational requirements. The Farmers Hotel, however, was not considered to be a feasible option because of its poor location, structural condition, and interior space which was not suitable for Parks Canda's requirements.

Management guidelines were approved for Fort Anne in 1979 which called for both the analysis of current usage data (and the 1978 National Historic Park Visitor Survey) and preparation of visitor projections to assist in the formulation of development concepts and comprehensive plan.

FORT ANNE
NATIONAL HISTORIC PARK

Visitor Reception Centre, Visitor Parking and Visitor Circulation Options

OPTION 1 - TOWN HALL

VISITOR RECEPTION CENTRE

- Interpretive area for displays, artifacts, etc.
- Audio-visual theatre
- Orientation, information and public washrooms
- Park administration and maintenance

VISITOR PARKING

- Main visitor parking to occur on D A R property on St George St (see inset)
- Small visitor parking lot to occur on former Texaco property to replace those spaces removed from existing lot on Parade Square
- Bus bays required on St. George St. in two locations, in front of reception centre and near present entrance road

VISITOR CIRCULATION AND BOARDWALK LINK

- Desired circulation as shown
- Boardwalk would lead to front entrance of Visitor Reception Centre on St. George St
- Footpath would continue along behind Visitor Reception Centre

OPTION 2 - COURT HOUSE

VISITOR RECEPTION CENTRE

- Interpretive area for displays, artifacts, etc
- Audio-visual theatre
- Orientation, information and public washrooms
- Park administration and maintenance

VISITOR PARKING

- All visitor parking to occur to rear of building with vehicle entrances from St George St and Highway No 1

VISITOR CIRCULATION AND BOARDWALK LINK

- Desired circulation as shown
- Boardwalk would swing up to St. George St. near Town Hall
- Footpath would continue along behind Town Hall

OPTION 3 - FORMER TEXACO PROPERTY

VISITOR RECEPTION CENTRE

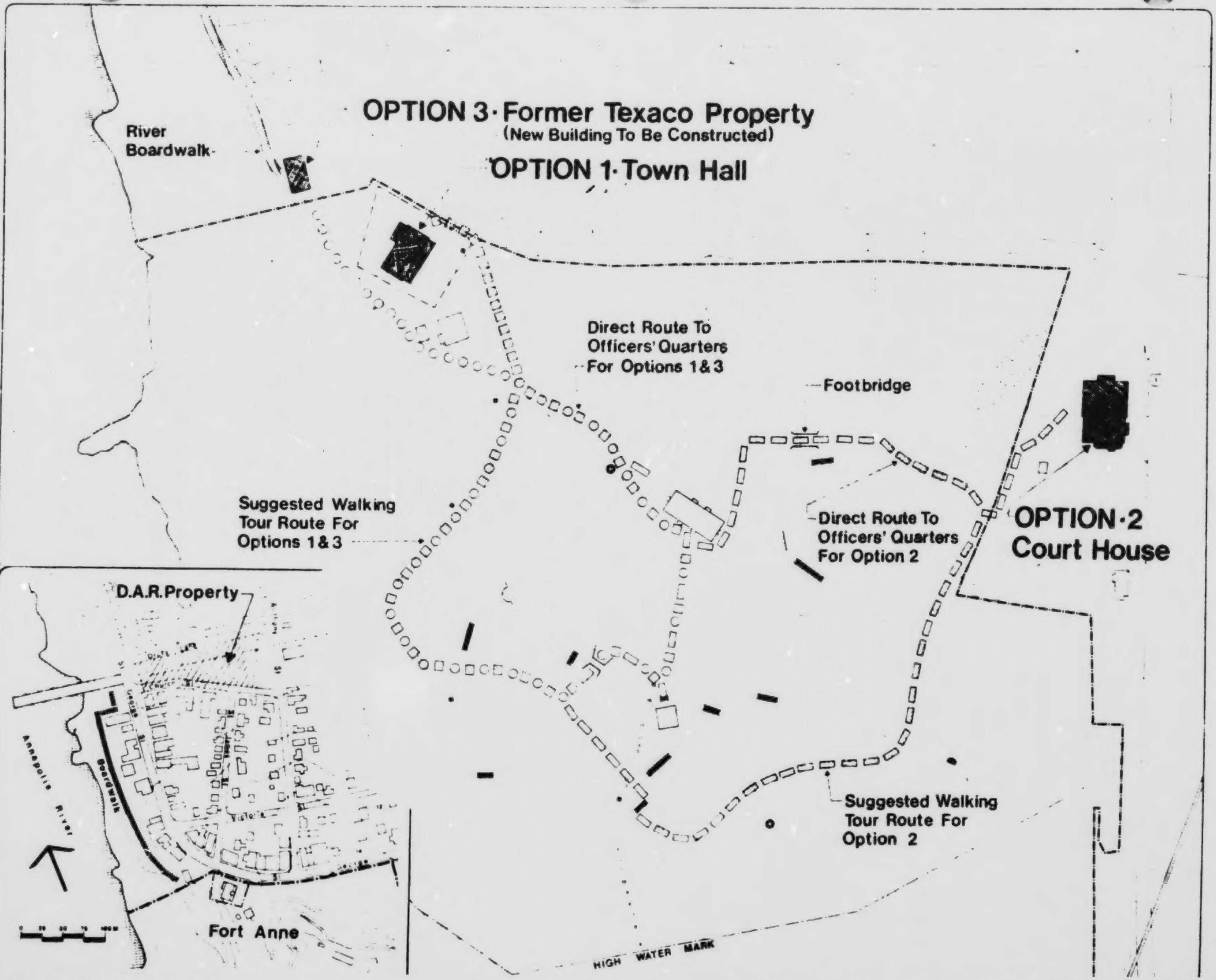
- New building to be constructed
- interpretive area for displays, artifacts, etc
- Audio-visual theatre
- Orientation, information and public washrooms
- Park administration and maintenance

VISITOR PARKING

- Most visitor parking to occur on D A R property on St. George St. (see inset)
- Parking for handicapped visitors located on site
- Bus bays required on St. George St. in two locations, in front of reception centre and near present entrance road

VISITOR CIRCULATION AND BOARDWALK LINK

- Desired circulation as shown
- Boardwalk integrated into design of Visitor Reception Centre
- Once past Visitor Reception Centre footpath would continue along behind Town Hall


OPTION 3 · Former Texaco Property
(New Building To Be Constructed)
OPTION 1 · Town Hall
River Boardwalk
Direct Route To Officers' Quarters For Options 1 & 3
Footbridge
Suggested Walking Tour Route For Options 1 & 3
Direct Route To Officers' Quarters For Option 2
OPTION · 2 Court House
Suggested Walking Tour Route For Option 2
HIGH WATER MARK
D.A.R. Property
Boardwalk
Annapolis River
Fort Anne

2.1 Option Selection

Three options for the development of a Visitor Reception Centre were reviewed:

(1) renovation of the Town Hall;

(2) renovation of the Annapolis County Court House; and,

(3) construction of a new VRC on the Texaco and Wear Property.

The following criteria were used to evaluate existing buildings:

(a) space requirements;

(b) location of the building in relation
  - to the Park
  - to possible visitor parking areas
  - to potential vehicle and pedestrian movements
  - to ongoing tourist and heritage developments;

(c) the buildings' general condition;

(d) public safety considerations; and

(e) historical and architectural significance.

Adequate space was available within existing buildings to meet Park requirements. With the exception of the Court House, the locations were suitable for a visit to either the downtown or the Park. The Town Hall and Court House are currently in use and Parks Canada may not be able to acquire either of those properties. Although the Texaco property was purchased by Parks Canada (for $33.0 in 1982), the Wear property was sold to a private owner. As a result parking for a maximum of three to four vehicles and a bus bay can be provided on-site, rather than for twelve to fifteen vehicles as was originally hoped. On-site parking can be provided at the Court House at very high development costs. Parking requirements can be partially met on-site at the Town Hall if the adjacent intertidal area is land filled.

In light of comments received from the Annapolis Royal Development Commission about Parks Canada's proposal to direct overflow parking to the municipal lot on George Street (the Dominion Atlantic

Railway Lot), Parks Canada agreed to undertake a joint study of other parking alternatives in the Town for Fort Anne visitors. A premise accepted by regional managment for this study was the need to replace the number of parking spaces removed from the Parade Square, even though visitor projections indicated a larger lot was necessary. This premise was accepted because Parks Canada had only met a portion of the parking demand generated by visitors and it was recognized that at least a comparable level of service should be maintained.

Ten parking options were evaluated on the basis of the following criteria:

(a) capacity;

(b) walking distance to the Fort;

(c) ownership; and

(d) development costs.

All lots further than 300 to 400 metres from the VRC (roughly the same walking distance from the Texaco property and the DAP lot) were eliminated from further consideration. Six options were presented to Regional Management which approved the recommended purchase of a lot at the corner of Victoria and St. Anthony Streets. This lot meets the minimum parking requirements; with the exception of the Town Hall, involves the shortest walking distance (140 metres); and is likely to involve the lowest acquisition and development costs. Cost estimates for the acquisition and development of visitor parking are based on this proposal. If Parks Canada is unsuccessful in acquiring this property, other avenues of off-site parking will be explored.

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts

Plans for parking, traffic and pedestrian circulation will have to be compatible with downtown redevelopment proposals. In particular, the proposed one-way circulation on St. George Street will affect on-street parking in front of the Fort. The Visitor Centre should be located so that there is easy pedestrian access from the proposed scenic boardwalk.

2.3 Visitor Market Forecast

The major problem in the local tourist sector is the "pass through tourist" departing or embarking on the ferry who spends little or no time in the region. In 1974 thirty percent of the non-resident tourists passed through the region, 22 percent stayed overnight and 5.6 percent did not stay anywhere else. Most (over ninety percent) only passed that way once. (Nova Scotia 1974 Auto-Exit Survey). The tourist industry in Southwestern Nova Scotia is structured to capture the sightseeing and automobile touring markets. There is only a small local market: the population of Annapolis Royal was 740 persons in 1976; that of Annapolis county was 23,210; and that of the Annapolis Valley was 82,930 persons. The local population is relatively stable and little growth (0.6 percent per year) is expected in the next ten to fifteen years. Southwestern Nova Scotia is further from major population centres in Central Canada and the Eastern seaboard of the United States than many other prime vacation destination areas. Distance adds to the costs of vacations in time and money. Excalating energy costs since 1974 have had an impact on long term growth in tourism. Prices are significantly higher in Southwestern Nova Scotia than in the United States and the gap is widening. In 1976 the celebration of the American Bicentennial, the Presidential races, and the Montréal Olympics contributed to a major short run decline in tourism. At the same time, there was a major reduction in ferry capacity between Portland and Yarmouth during the peak visitor season. The upgrading of local highways, in particular the construction of the 101, which bypasses Annapolis Royal, may also have an impact on local tourism.

Southwestern Nova Scotia has attracted a significant percentage of the non-resident tour bus market. Although about 35 percent of the American tourist traffic entered Nova Scotia by way of Digby and Yarmouth, over fifty percent (53.2 percent) entered at Amherst.

The origin of visitors to Fort Anne has changed somewhat during the seventies. Although the average party size has remained relatively stable, the average duration of each visit has increased.

TABLE 2: SOUTHWESTERN NOVA SCOTIA TOURIST MARKETS

(A) Entry Point of Non-Resident Visitors	Canadian (%)	USA And Other (%)
Digby	3.0	8.3
Yarmouth	0.5	26.8
TOTAL	3.5	35.1

(B) Transportation Mode	Auto (%)	Tour Bus (%)	RV'S (%)
Digby	4.1	10.0	4.7
Yarmouth	6.0	41.0	2.9
TOTAL	10.1	51.0	7.6

Source: Tourism Nova Scotia, 1978.

TABLE 3: CHARACTERISTICS OF VISITORS TO FORT ANNE NATIONAL HISTORIC PARK (1966 & 1978)

(A) Origin (%)	1966	1978
Canadian	65.2	57.5
(Nova Scotia)	(40.9)	(33.5)
USA & Other	34.8	42.5

(B) Party Size (persons)	1966	1978
Average	3.5	3.4

(C) Duration of Visit (minutes)	1966	1978
Average	36.8	48.0

Source: Parks Canada National Historic Park Visitor Surveys.

Very few visitors gave Fort Anne as their main destination in 1978. Three quarters were visiting the National Historic Park for the first time, and almost half of the visitors stopped for reasons other than an

TABLE 4: TRIP DESTINATION

FORT ANNE	%
Main destination	2.3
One of several planned stops	60.6
An unplanned stop	37.1

interest in history. Over eighty percent (84.1 percent) parked within the Fort and 81.3 percent went sightseeing within Annapolis Royal. Less than two percent experienced any difficulty with parking.

Based on past trends (1950 to 1979) a growth rate of three percent per year in visitation was expected, from 127,000 in 1979 to 172,000 in 1989. Assuming that the Visitor Centre opened in 1982, and that twenty percent of the parties arrived during the peak hour, on an average Sunday in 1989 parking for 65 vehicles would have to be provided (including up to eight spaces for oversized vehicles). Using the assumption that fifty percent of the visitors were likely to use the washrooms a peak Sunday usage rate of 180 persons was derived for 1989. If a maximum of twenty percent of the visitors are on-site during peak Sunday hours a potential seating demand of between fifty and a hundred persons in the a-v theatre could arise, depending on the length of the presentation (i.e. ten or twenty minutes).

When the Car lot, and other parking options were reviewed, the need for a special visitor parking study was considered and rejected. All the parking options which involve between a 300 and 400 metre walk are likely to meet with some resistance from visitors. Existing textbooks show that motor vehicle passengers are unwilling to walk long distances in smaller centres. These textbooks also show that the distance vehicle passengers are willing to walk depends on trip purpose and varies with parking duration. (Pignatro, 1973, Hobbs, 1974.) Given the small population of Annapolis Royal (a village of about 800 persons), and the unplanned nature of the stay (under an hour), walking distances of more than a block or two may be viewed as excessive by National Historic Park visitors. (Halifax Central Business District Parking Study, 1977; Louisbourg National Historic Park Visitor Survey 1978). There are also many alternative attractions between proposed visitor parking options and the Fort which the visitor may choose to see instead. Difficulties with parking, as well as the proposed highway bypass and one-way traffic circulation through the downtown area, may be major deterrents to park visitors.

CASE STUDY - 7

CAVE AND BASIN

VISITOR RECEPTION CENTRE

This case study is a good example of how a project proposal can be justified from a socio-economic perspective, based on historical use data and secondary source information.

Since the proposal calls for the redevelopment of a facility which was closed down for some time, data gaps prevent the estimation of trends based exclusively on past use. Analogies therefore, have to be drawn from other similar facilities.

The proposed redevelopment is also important from an interpretive viewpoint. Information objectives have, for this reason, been set for different parts of the complex.

1.0 PROJECT

The Centennial Centre project is a proposal to rehabilitate and redevelop the Cave and Basin site located in Banff National Park. The project is slated as a central component of the National Parks Centennial celebrations program in 1985. The Cave and Basin will become the only location in Canada where the entire story of the evolution of Canada's National Park System will be explored.

1.1 Forecast Cost - ($ 1983) Class C Estimate

Total	Previous	82/83	83/84	84/84	85/86
13,477.0	913.2	2,252.7	6,498.0	3,480.6	332.5

1.2 Planning Phase - Definition

Since 1885 many expansions of the Cave and Basin pools and bathhouses have taken place. However, time, use, and the natural elements, which gave rise to severe health and safety risks, forced closure of the pools in 1976. Parks Canada was subsequently asked by the Minister of Indian Affairs and Northern Development to prepare redevelopment options. Three were prepared, one of which was presented to the public in 1977. The concept called for the replacement of the Cave and Basin pools with a series of gardens.

Following public response against this limited rehabilitation to the Cave and Basin, new directions were given to the project. These included the preservation of the Cave and Basin architecture as well as preparing options for a new Aquacentre. The Aquacentre concepts were presented to the public in 1979. There was an overwhelming response to develop the Cave and Basin as the site of the Aquacentre.

In May 1980 the Heard, Wassman, Murray proposal was presented to the public and received support. Agreement was reached on the proposed Cave and Basin development concept during the September 1980 PMC meeting. However, financial restraint forced the phasing of the original proposal past 1985, the Centennial year. A revised development proposal was therefore submitted to Treasury Board, which approved it in July 1981. A third submission was made asking for additional funding to cover costs due to inflation. Treasury Board approved the additional funds in March 1982. Revised sub-projects to the Cave and Basin Centennial Centre projects were prepared in which funding requirements were downwardly adjusted. The revisions received Headquarters approval in May 1983.

Finally, a proposal to integrate a trail development proposal with the Centennial Centre project was submitted in September 1982. Effective approval of the proposal has been recommended.

1.3 Management Objectives

The Cave and Basin Centennial Centre project included the following planning and management objectives: research, develop, design, construct, test, and commission facilities and programs that will commemorate the centennial of Canada's National Parks at the Sulphur Mountain thermal mineral springs in Banff National Park. The facilities and programs should:

a) meet public health and safety criteria;
b) provide for the handicapped;
c) have minimal environmental impact;
d) ensure rehabilitation and protection of the environment surrounding the springs;
e) restore the unique architecture of the 1914 Cave and Basin building;
f) reinstate the swimming/bathing function at the site; and,
g) enhance public understanding and appreciation of the heritage values of Canada, the origin and evolution of Canada's National Park System, and the history of Banff National Park.

(Parks Canada, Request for Program Approval, Cave and Basin Centennial Centre, Banff, 1981, sections 2.1 and 2.2.)

1.4 User Requirements

The Heard, Wassman, Murray proposal, presented in 1980, recommended four major areas of development:

a) restoration of historical facilities and re-introduction of the swimming/bathing operations;

b) interpretation facilities, including the construction of the original 1886 bathhouse, rehabilitation of the Basin springs;
c) site rehabilitation; and
d) roadway and parking redevelopment.

Construction of a 2575 m^2 Centennial Centre was also included in the proposal. The Centre would contain the following functions:

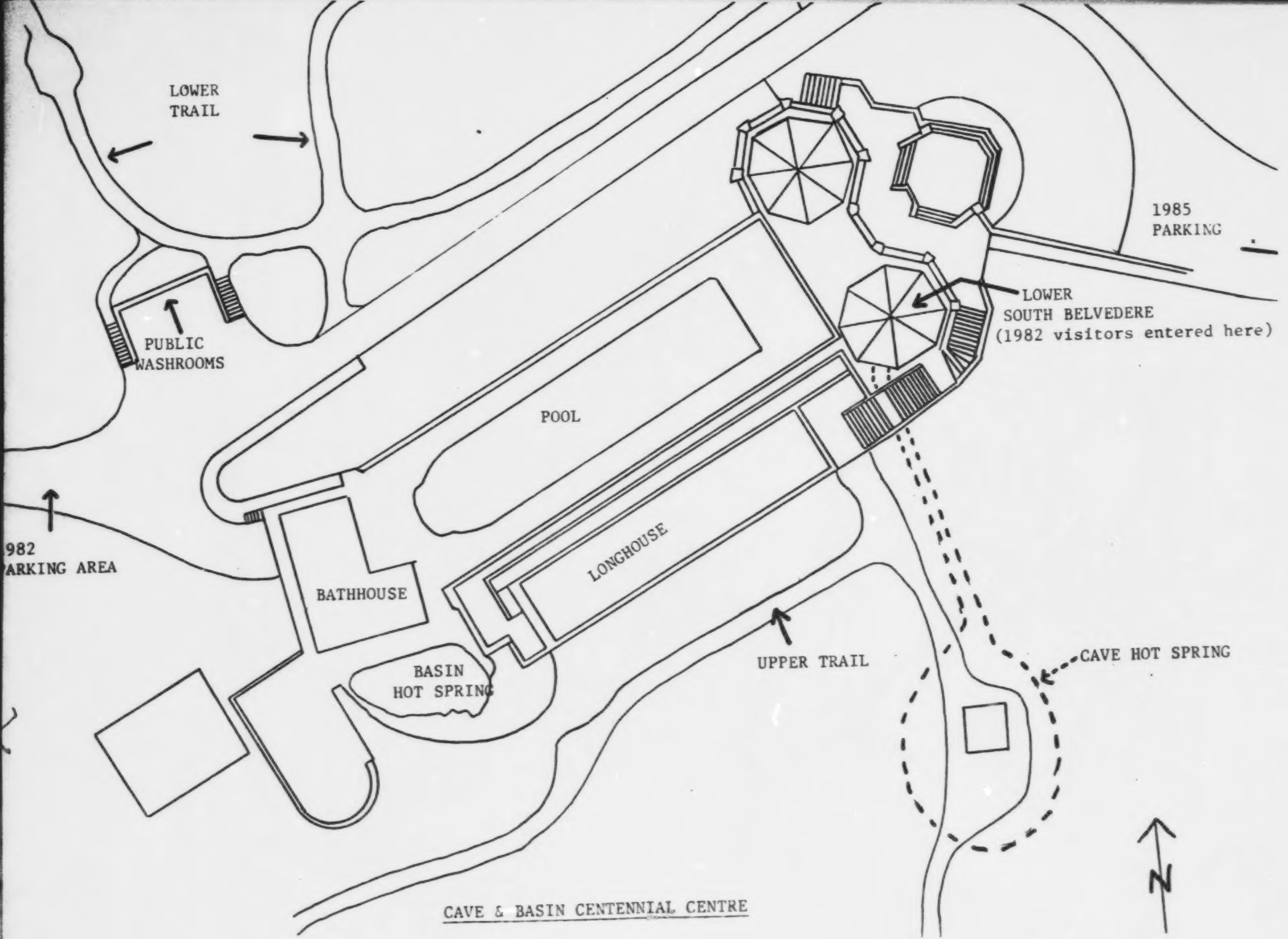
a) a central lobby/waiting area;
b) a 200 seat theatre;
c) the "Canada Building", to present an overview of Canada's natural and cultural heritage and the preservation role of Parks Canada; and workshops for Parks operations staff, public washrooms, char and storage areas. (PIP submission, Cave and Basin Centre 1980, pages 9-10.)

Because of financial restraints this plan was later divided into two phases. The first phase represented the core of the 1981 Centennial Centre plan which included the following components:

a) a new remote parking lot, connected by a forest path to a turn-around and drop-off zone at the east entrance to the pools and Cave in the 1914 building (a 260 space parking lot was recommended);
b) the restored 1914 building, including change rooms (with 160 lockers) and technical support areas for the bathing pool and connections to the Basin area facilities; and
c) the 1886 bathing pool, restored for viewing only, and period bathhouses containing the principal interpretive components for the Centennial message theme.

Other site work will provide viewpoints, trails, boardwalks, and a toilet building (Request for Program Approval 1981, section 4.1). Figure 1 presents a general outlay of the site, following the proposed redevelopment.

The interpretive component of the concept would include a wide range of media such as audio-visual productions, displays, panels, graphics, visitor



CAVE & BASIN CENTENNIAL CENTRE

"demand" media, and historical artifact displays. Figure 2 presents the site location of various interpretive components.

A sub-project was added to the Centennial Centre proposal in 1982. It called for the construction of a one kilometre trail on the slope between the Cave and Basin structure and the marsh immediately to the north.

While the Cave and Basin pool will be in operation only during the summer season (i.e. June 15 to Labour Day), the Centennial Centre interpretion components will operate year-round. (Request for Program Approval 1981, Summary.)

A total of 4.36 person-years will be required for the pool operations while an additional 4.01 person-years will be needed for General Works and Interpretation activities at the Centre.

1.5 Interpretation Objectives*

The following major interpretive objectives have been set for the Cave and Basin:

a) 90% of visitors who have been inside the building at Cave and Basin will know it is the birthplace of Canada's National Parks;
b) at the discovery mural (location 4) 100% of visitors here will know that the National Park system is 100 years old; 40% will know the discoverers entered the cave via the vent;
c) 100% of visitors will orient towards the mural; for 80% there will be a holding power of .80 (ratio of actual time spent to expected time spent at the mural);
d) visitors will experience interest, comfort, lack of threat, and safety at the site.

As for the overall traffic flow, it is expected that the following percentages of all centre visitors will reach these areas:

swimming area - 14%
Lower South Belvedere - 89%

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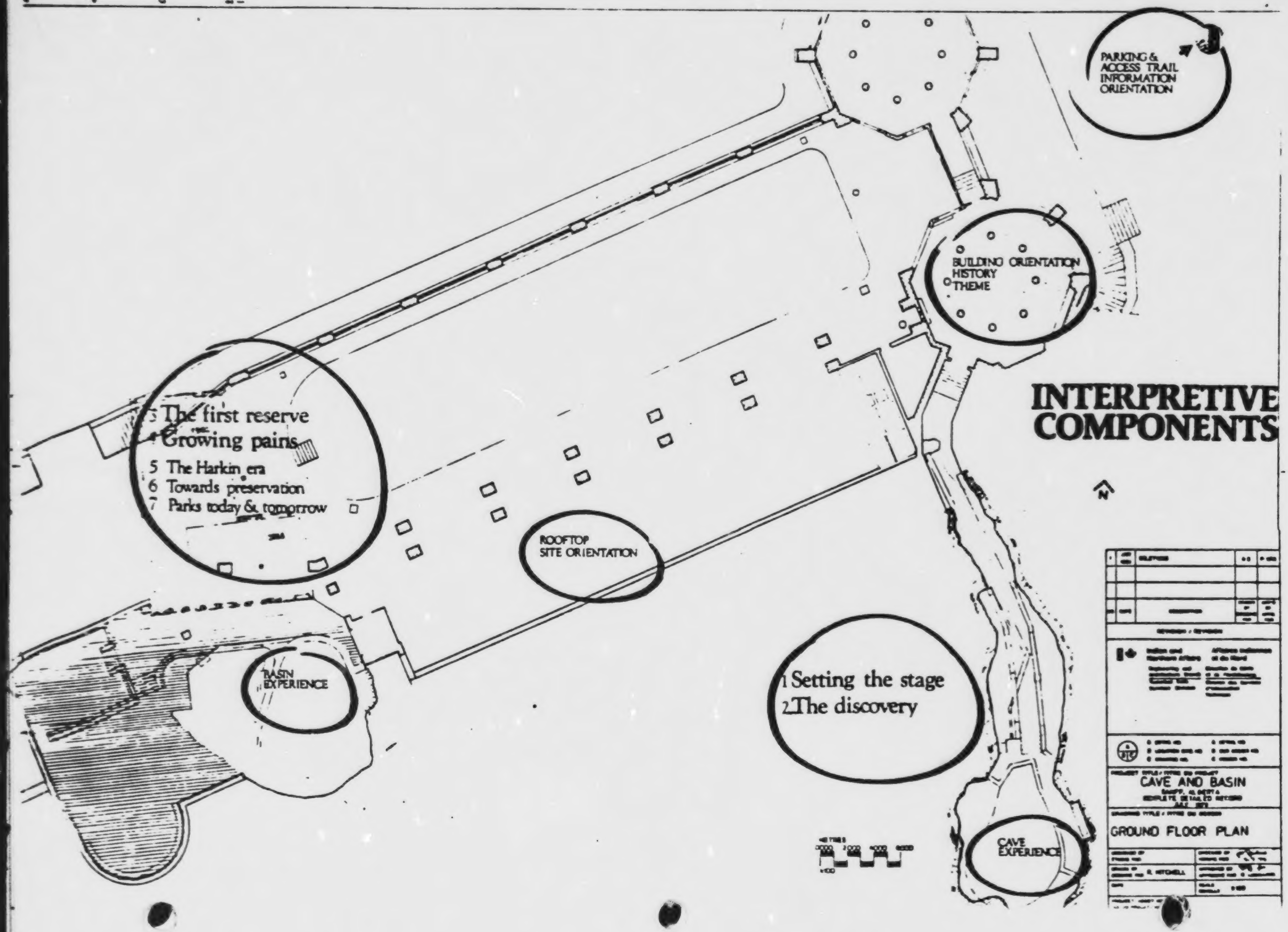
* The information contained in this section is taken from the Cave and Basin Centennial Centre Media Package, March 1982.


INTERPRETIVE COMPONENTS
PARKING & ACCESS TRAIL INFORMATION ORIENTATION
BUILDING ORIENTATION HISTORY THEME
3 The first reserve
4 Growing pains
5 The Harkin era
6 Towards preservation
7 Parks today & tomorrow
ROOFTOP SITE ORIENTATION
BASIN EXPERIENCE
1 Setting the stage
2 The discovery
CAVE EXPERIENCE
N
CAVE AND BASIN
GROUND FLOOR PLAN
R. MITCHELL

the Cave - 85%
2nd Floor longhouse - 58%
Basin area - 45%
Northwall Walk - 20%
Upper Trail - 15%
Lower Trail - 5%

2.0 PROJECT CONCEPT

2.1 Option Selection

After severe health and safety risks forced the closure of the Cave and Basin pool facilities in 1976, redevelopment of the site was proposed. Several options were proposed from 1977 to 1981.

The first alternative, known as the Garden concept, called for the removal of the swimming/bathing function in favour of a series of gardens, and the redevelopment of the historic 1914 building as an interpretive centre. Public resistance to this option was strong, mainly because it excluded swimming. The proposal was therefore rejected.

The second alternative, called the Bond Mogridge Plan, attemped to incorporate bathing and interpretive components within the historical buildings while limiting changes in architectural style and appearances. However, the proposal was primarily directed to the swimming component and did not leave sufficient room for the interpretive portion of the project. Because of the commemorative restrictions in this plan, it was also rejected.

The third option, the Heard, Wassman, Murray Proposal, recommended that new interpretive buildings be developed mainly for stories and media. This would allow swimming to be retained in the 1914 building. However, financial restraint forced the phasing of this concept past 1985, the Centennial year. The first phase would concentrate on the redevelopment of the existing old buildings, the pool, along with site and parking improvements. The proposed new buildings would be postponed for a future phase. Revisions required by this phasing were then included in the plan (Request for Program Approval 1981, page 3), which was approved in July 1981.

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts Unavailable

2.3 Visitor Market Forecast

An on-site survey conducted in 1980 indicated that the majority of visitors to the site were of Canadian origin, while Americans represented the majority of foreign visitors (Table 1).

TABLE 1: VISITOR ORIGIN

Country	%
Canada	80
USA	10
UK	3
Europe	3
Other	4

Source: Parks Canada, Request for Approval, Cave and Basin Centennial Centre, April 1981, section 5.2.

A 1980 traffic and visitor study of the Cave and Basin area indicated that approximately 69.1% of visitors to the site entered the Cave, and that about 58% were interested in viewing the pool. Table 2 summarizes visitor activities at the Cave and Basin during the summer of 1980.

TABLE 2: VISITOR ACTIVITY, CAVE AND BASIN, 1980

Activity	%
Enter the Cave	69.1
Look at the pools	58.5
Go to Upper Observation Deck	51.1
Look at/read inside sign	48.9
Go to Cave Vents above building	41.5
Write comments	3.2
Use trails below facility	3.2
Through (no stop)	8.5
Other	9.6

Source: M. Brunell, Traffic and Parking - 1980, Western Region, Parks Canada, p. 24, WRO.

The 1980 mini-survey conducted at the Cave and Basin indicated that 68% of the 1,400 respondents were in favour of restored swimming pool facilities at the site (Request for Approval 1981, section 5.2).

The Cave and Basin site is located 1.6 km from Banff Townsite. Although no swimming has been allowed at the Cave and Basin since 1976, July 1980 visitor volume at the site was estimated to be in the area of 52,000 people. Of these, 70% actually entered the cave. Average duration of stay at the site was 14 minutes (Project Justification, Cave and Basin Centennial Centre, August 1980, p. 28). Based upon current seasonal activity patterns, it was estimated that the yearly attendance was approximately 350,000 people.

Visitor market trends for Banff National Park indicate activity levels in the park will continue to grow at a rate of five to six percent until the year 2000. These trends also show Banff is presently experiencing a long term transition from summer season dominance to a year-round centre. Table 3 shows the levels at which seasonal differences will stabilize (around 1990).

TABLE 3: SEASONAL DIFFERENCES, BANFF, 1990

Season	% of year's activity
Winter (December - March)	31
Spring (April - May)	15
Summer (June - September)	50
Fall (October - November)	14

Source: Project Justification, Cave and Basin Centennial Centre, 1980, p. 28.

Based on pre-1976 swimming statistics and assuming a 5-6% annual visitation increase at the Cave and Basin site, it was estimated that, if swimming/bathing facilities were restored to late 1960's conditions, the summer season demand would rise to a maximum of 668,000 people by year 2000 (Table 4). Assuming that the Cave and Basin redevelopment proposals had been built and operating in 1980, and that a program had been in place that would raise awareness levels of the Cave and Basin to those of the Upper Hot Springs or

Sulphur Mountain gondola, it was estimated that the Cave and the interpretation displays would have received 500,000 people in 1980. Based on a five to six percent annual increase in use, this part of the Centennial Centre would receive a maximum of 1,603,000 visitors in the year 2000. Adding both swimming and Cave interpretation estimates, it was estimated that the maximum total visitation at the Cave and Basin would be approximately 2,271,000 (Table 4).

TABLE 4: TOTAL VISITATION FORECAST, CAVE AND BASIN

Year	Swimming/Bathing	Cave/Interpretation	TOTAL
1980	210,000 - 236,000	500,000	710,000- 736,000
1985	250,000 - 294,000	638,000- 669,000	888,000- 963,000
1990	304,000 - 376,000	814,000- 895,000	1,118,000-1,261,000
1995	385,000 - 499,000	1,039,000-1,198,000	1,424,000-1,697,000
2000	492,000 - 668,000	1,326,000-1,603,000	1,818,000-2,271,000

Source: Project Justification 1980, p. 31.

No data was available to indicate the number of people that would be attracted to the site for hiking, walking or bicycling.

2.4 Life Cycle Cost Analysis Unavailable

2.5 Estimation of Economic Benefits Unavailable

2.6 Comments

A project authorization request presented in 1979 indicated the need for socio-economic information to determine optimum design sizing for the pool and dressing facilities, and for parking areas at the Cave and Basin site. In February 1980, SED identified the need for information such as the anticipated number of visitors and peak loading. Because of the complexity of media planned for the Cave and Basin, information was also required on the number of visitors and their characteristics. Socio-economic data presented in support of the Centennial Centre project was based on secondary sources (i.e. past surveys in Banff National Park, Banff Townsite, traffic surveys, etc.). User projections were also derived from secondary source data. The projections were used to estimate the required number of lockers at the swimming pool and the size of the parking lot.

3.0 PROJECT DEFINITION

Soon after the Centennial Centre proposal was resubmitted for approval as a two phase project, user projections for the Cave and Basin facilities were prepared. The results were used to estimate the size of various facilities and services at the site.

3.1 Evaluation of Socio-Economic Impacts Unavailable

3.2 User Projections

The restored Cave and Basin will feature a large recreational swimming pool which will operate at levels similar to those of the 1971 to 1976 period. When re-opened in 1985, the pool should attract an estimated average of 600 to 700 partrons per days or 50,000 to 55,000 patrons throughout an 80 day summer season (J.G. Rouse, Socio-Economic Considerations, Cave and Basin 1981, p. 2). These estimations are based on the following assumptions:

a) the restored Cave and Basin pool will function in a manner comparable to pools in Waterton and Jasper National Parks;
b) the general level of activity in the Banff area will be higher in 1985 than it was in the 1970's;
c) the new pool will be more attractive than the old, deteriorated one;
d) the mineral springs are a proven visitor attraction; and
e) there appears to be a declining interest in recreational swimming in National Park pools (Rouse 1981, p. 2-3).

Average duration of stay in the pool area was assumed to be one hour. Peak hour patronage was assumed to be 15 to 16 percent of daily volume. Peak day demand was assumed to represent 1.5 times the daily average. Based on these assumptions, it was estimated that 160 lockers should be provided.

The parking lot for the Cave and Basin will be located approximately 500 metres from the site. This factor should not be of any great significance for pool users as swimming occurs mostly on warm sunny days. However, the distant parking might affect visitors use of the Cave and interpretive facilities.

During fall, winter, and spring periods the walk will commonly be under less than ideal conditions and should result in low levels of attendance at the site. However, assuming that during the summer season the trail walk to and from the parking lot could itself become an attraction, then the estimated 1980 summer season level of visitation (160,000 visitors) could be maintained. This would represent an average of 1,300 visitors per day during the June to September season (Rouse 1981, p. 4).

To estimate the parking space requirements, it was assumed that 80 percent of pool patrons and cave visitors would arrive by private vehicle (the balance on foot or bicycle). Parked time would average 80 minutes in the case of pool users and 60 minutes for cave visitors. In all cases, the average private vehicle occupancy was assumed to be three persons. Peak hour parking volumes would represent 15 percent of daily volume for each type of visitor. Peak hour parking demand would be 1.5 times average daily volumes for pool users and 1.85 times for Cave visitors. Based on these assumptions, a minimum of 160 spaces (63 pool user spaces and 96 cave visitor spaces) would be required. Using a growth reserve of 25% (40 spaces) an initial supply of 200 parking stalls was estimated to be adequate for the first few years of operations. The lot design should provide for three or four buses and also forsee possible future expansion.

PART 2 - CAMPGROUNDS

A. Introduction

1.0 CAMPGROUNDS

There are three phases of project planning during which socio-economic analysis and impact assessment has a role to play: concept, definition, and predesign.

When the project is presented for discussion and review, the project sponsor is responsible for describing the rationale for the project including the functional requirements to be met. The rationale for the project should also include a thorough options analysis where appropriate. Each option should be screened for potential adverse socio-economic impacts. An options analysis should also include a full life-cycle costing for each option examined. Less frequently estimates of the economic spinoffs generated by the preferred option (eg. job and income creation) will be required.

After an option is selected, during the definition phase of project planning, a project brief is prepared. A budget, work plan and implementation schedule are proposed for review. Any remaining data collection and analysis thought necessary should be indicated at this time. Guidelines for later planning and design decisions are set.

During the predesign phase of project planning, functional requirements may be further refined or modified. For example, the final scale or operating capacity may be chosen on the basis of user projections.

Socio-economic factors have a significant role to play in the siting, in the selection of a design capacity and in the choice of an appropriate level of service for motor vehicle accessible campgrounds. These factors generally come into play in management decisions to construct a new campground, or to expand or rehabilitate existing campgrounds. In the case of an expansion there are major alterations or additions proposed which change the scale or operating capacity of the campground. In the case of a campground rehabilitation there may be changes in the appropriateness, quality, or level of service offered.

1.1 Visitor Markets

There are two aspects to a campground market analysis. First, an inventory of the current regional accommodation supply must be made and potential changes, such as plans for additional capacity, must be identified. Then current occupancy rates have to be evaluated on the basis of past trends and future projections. By estimating the regional capacity and evaluating the facilities offered by competitors it is possible to determine the extent to which an adequate supply of accommodation at an acceptable price may be available within the immediate vicinity. Not only shortages and spare capacity, but also potential direct competition with the private sector, may be identified. Secondly, the characteristics of user groups need to be highlighted, and potential changes in the size and composition of these groups must be forecasted. Usage of a particular form of accommodation in a given locality is in part a reflection of the cost, of the mode of access used and its proximity to major transportation corridors, and of changes in the profile of popular activities within the immediate vicinity.

Visitor markets consist of different user groups with identifiable characteristics, park use activities, and interests. That is to say, consumer groups which have a similar impact on the facilities and services offered by Parks Canada. There are three common bases used to segment visitor markets: geographic, population, and behavioural characteristics. Origin, for example, is an important characteristic because camping demand can be forecast as a function of the growth of user groups and the distance they travel to get to the park.

Recreational interests and pursuits, facility and service preferences are often reflected in the make-up (age and sex composition) of parties using the campground. However, the kind of camping equipment used is highly indicative of the amenities needed and the camping experience sought by the visitor. Whether or not the campground is a main destination or enroute stopover gives some indication of the potential use of the campground.

Other factors such as the extent to which visitors have advance information to plan their trip or their familiarity with the park from previous visits are equally important.

User preferences should also be taken into consideration. Those who are looking for a natural environment and privacy may be content with primitive facilities. In contrast, those who enjoy camping as a social experience may want more modern conveniences, a variety of recreational facilities, or organized activities and events.

1.2 Siting and Access

A different planning and operational approach may be required for campgrounds which are adjacent to major park attractions and those which are adjacent to major transportation corridors. A destination area campground either provides access to nearby park features and points of interest, offsite recreational opportunities or other facilities and services in the area. As a result, it attracts visitors who plan a longer stay based on the available amenities and who participate in specific recreational activities. Campgrounds which are used as stopovers along major transportation routes may only need to offer basic amenities. For this type of campground, the composition of traffic flow on access routes provides a better profile of potential users. Where these siting factors coincide, a full range of amenities and on-site recreational opportunities may have to be considered.

1.3 Design Capacity

If the design capacity selected for a campground and its associated support services is too small, the campground will require alterations or renovations to meet requirements which could have been anticipated and accommodated at less expense when the facility was first constructed. On the other hand, a campground whose capacity exceeds peak demand will be underused and more costly to operate than necessary over the foreseeable future. Choice of an acceptable design capacity should be based on an analysis of current or expected trends in visitor use.

The design capacity, while accommodating the majority of visitors during a normal season and hours of operation, should not be based on extreme peaks in visitor use. An analysis of options should include consideration of alternative design and operational strategies for increasing campground capacity during peak periods. This includes provision of overflow sites and redirecting visitors elsewhere.

Campground capacity is based on the number of visitor parties expected to arrive by a given transportation mode as well as camping equipment usage. From this information, the number of sites, the desirable size, spacing, parking and other servicing requirements can be determined. Party size and composition often varies for different origin groups and transportation modes. This information is sometimes necessary to derive a more reliable estimate of the water service and fixture requirements.

Expansion of an existing campground should be based on an evaluation of trends in seasonal and daily occupancy rates. For example, if peak usage is limited to either weekends and holidays or just a few days during the peak summer months, temporary overflow sites may be provided. The possibility of referring excess parties to other campgrounds within a reasonable driving distance should also be examined. Length of stay is an important factor associated with low site turnover. A high level of repeat use is often associated with queueing. A record should be kept of the number of parties placed on waiting lists and the number of parties turned away per night when the campground is full to capacity. This information will permit a reliable estimate of user demand to be prepared.

Sustained use contributes to campsite degradation and the deterioration of the facilities provided in park campgrounds. This is only one of the reasons for the periodic rehabilitation of park campgrounds. Changes in the composition or level of demand may also provide the basis for changes in the level of service provided. For example, the increasing use of recreational vehicles has resulted in a demand for water, sewer and electrical services. The growing popularity of winter camping has resulted in some campgrounds being converted for year-round operations. When park campgrounds undergo periodic rehabilitation or renovations, it may also be appropriate to review the operating capacity and level of service.

B. Checklist

1. Market Identification - have potential suppliers and user groups been identified?

   (a) Regional Accommodation Supply
      - capacity
      - occupancy rate
      - level of service
      - other ammenities

   (b) User Group Profile
      - origin, distance travelled
      - party size, composition (eg. age, sex)
      - equipment usage
      - transportation mode
      - main destination, stopover
      - first time, repeat visit
      - length of stay
      - accommodation preferences

2. Siting and Access - has the proximity of the campground to various visitor markets been identified?

   (a) Destination areas
      - recreational opportunities, participation rates
      - park features and points of interest
      - other facilities and services, usage rates

   (b) Transportation corridors
      - traffic composition

3. Design Capacity

   (a) Has a design capacity (for a normal season and hours of operation) been proposed for the facility and associated support services?

   (b) When will the design capacity of the facility and each of its components be reached?

   (c) Have alternative design and operating strategies, satisfying user requirements, been considered?

C. Case Studies

Case Study - 1
Jeremy Bay
Campground Expansion

Case Study - 2
Kouchibouguac South
Campground Expansion

Case Study - 3
Johnston Canyon
Campground Rehabilitation

CASE STUDY - 1

JEREMY BAY

CAMPGROUND EXPANSION

The following case study serves as a good example of the way in which socio-economic data can be used to estimate the impact a proposed Parks Canada development project will have on the surrounding region.

A preliminary screening of potential adverse socio-economic impacts indicated that the proposed expansion to Jeremy Bay Campground could adversely affect private campground operators in the area. A visitor market analysis, using secondary source data, was conducted to estimate the actual camping demand in the Kejimkujik National Park area and the possible regional impact of the proposed expansion. Further monitoring of other camping trends in the area was finally suggested.

1.0 PROJECT

1.1 Forecast Cost - (1982 $) Class C Estimate

Total	Predesign 82/83	Design 83/84	Construction 87/88
$1002.5	5.5	54.5	942.5

1.2 Planning Phase - Predesign

Preliminary approval has been given to proceed with the design of sixty additional sites.

1.3 Management Objectives

The project will meet the expressed desire of park users for more semi-serviced campsites in the Park. At the same time, construction of additional campsites inside the Park must be balanced against other considerations such as any loss of business by existing campgrounds outside the Park, or any loss of opportunities for private sector investment.

1.4 User Requirements

Sixty additional tenting-only campsites will be developed in the area between Jim Charles Point and the existing campground. The first sites on the loop will be drive-in sites for tenters only, with the remainder being of the walk-in variety similar to those at Big Dam Lake. One central washroom facility will serve the sites. The new loop will be designed to provide camping opportunities now available at only ten campsites in the Jeremy Bay Campground. It would accommodate the visitor who does not have the inclination or ability to travel to wilderness campsites and yet who wants a quiet tenting experience, different than the one now available in the existing Jeremy Bay Campground loops. For this reason, the campsites will be spaced further apart than in the other loops in order to ensure more quiet and privacy. (See Management Plan, pages 31-22.)

1.5 Comments

This Park has an approved management plan which supports the proposed campground expansion if there is sufficient unmet demand. There does not appear to be sufficient demand at this time and the potential impact of this expansion on private sector operators has not been determined.

2.0 PROJECT CONCEPT

Implementation of the proposed sixty site campground should depend on the conditions outlined in the management plan:

(a) Parks Canada will proceed with construction of more semi-serviced campsites only if the demand now clearly demonstrated is not met by private enterprise in the near future.
Source: Management Plan, Section 6 - Visitor Use and Enjoyment, page 31.

(b) If additional campsites are provided, they will be of the tenting-only variety. No additional serviced or semi-serviced sites for trailers will be developed, as these would be in direct competition with the private campgrounds.
Source: Management Plan, Section 8 - Regional Relationships, page 50.

2.1 Option Selection

The size of the proposed campground expansion was based on a user forecast prepared by the Socio-Economic Division for the Atlantic Regional Office (SERD 77-14).

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts

Regional campground operators were identified as likely to be adversely affected by the proposed campground expansion. The proposed expansion will only be undertaken if there is sufficient visitor demand and the private sector is unwilling or unable to meet the additional demand (Management Plan, Section 8 - Regional Relationships, pages 47-50.)

2.3 Visitor Market Forecast

The provincial campground industry has cut back excess capacity. Private sector operators have eliminated 690 unserviced sites since 1980, while at the same time adding 250 serviced sites to their inventory. Public sector operators (federal, provincial and municipal) have maintained their existing capacity, however, where less than one third of the sites offered by private operators are unserviced, over ninety per cent of the public campsites are unserviced. While tent camping has generally declined throughout the province, Kejimkujik has consistently pre-empted an increasing share of the local camping market.

Construction of additional tenting-only sites at Jeremy Bay, inside Kejimkujik National Park, will respond to visitor preference for more semi-serviced campsites in the park. If there is sufficient visitor demand, additional tent sites are the least likely to compete with the offerings of private campground operators.

Since the early seventies, the Annapolis Valley and South Shore have declined in popularity as tourist destinations. At the same time this decline has been more than offset by the growth in the number of weekend excursions and home-based day use by Nova Scotia residents.

TABLE 1: ANNAPOLIS VALLEY AND SOUTH SHORE TOURISM

Peak Season (%)	1971	1974	1977
Visit	(79)	(65)	(62)
Camp	(30)	(23)	(20)

Source: Nova Scotia Tourist Auto-Exit Surveys

Resident visitor parties were 68 percent of the park entrants in 1973 and 84 percent of the entrants in 1980. According to Nova Scotia Tourism almost 20,200 non-resident parties visited the park area. (Tourist

Auto-Exit Survey, 1980.) However, less than 3,400 non-resident parties visited the Park itself. (Visitor Services, Kejimkujik National Park.)

A survey of park users in 1982 showed that seventy percent were repeat visitors. Travel cost was the main reason for choosing Kejimkujik; money (23%), distance (17.5%), and time (11%) were the most important factors in their decision. Very few (16 percent) considered alternative destinations and only about half (8.8 percent) would have chosen another park. Almost eighty percent were certain to return.

Kejimkujik offers three types of camping experience: backcountry primitive sites, semi-serviced sites, and group sites. The users of semi-serviced sites are more likely to be family groups from Nova Scotia. Parties staying in semi-serviced sites are more likely to use not only park but also nearby commercial facilities and services.

TABLE 2: KEJIMKUJIK CAMPSITES USER PROFILE 1982

Campsites (%)	Nova Scotia	Else	Families	Male/Female
Backcountry	68	32	52	72/28
Semi-Serviced	76	23	80	63/37
Group	65	35	32	38/62

Source: Market Segmentation Study, 1983.

Two development options were evaluated by means of a user forecast prepared by the Socio-Economic Division in 1977. Option One, the low growth scenario, called for an annual increase in visitation of 2.2 percent and an annual increase in campground usage of 2.6 percent per year. Option Two, the high growth scenario, called for an annual increase in visitation of 8.8 percent and an annual increase in campground usage of 3.1 percent per year (SERD 77-14).

The actual increase in visitation from 1976 to 1980 was 2.1 percent per year. This compares favourably with the forecasted growth in Scenario One. However, it is Scenario Two which is associated with the proposed campground expansion and other park developments.

TABLE 3: FACILITIES AND SERVICED VISITORS EXPECTED TO USE 1982

Facilities/Services	Users	
	Park	Semi-Serviced Campsites
(A) Park Facilities:	%	%
Shower building	(59)	(81)
Heater washrooms	(56)	(73)
Playgrounds	(44)	(75)
Fire pits	(26)	(82)
Cook shelters	(22)	(32)
Recreation building	(16)	(76)
(B) Park Services:	%	%
Guided paddles	(85)	(85)
Children's program	(80)	(80)
Cut firewook	(44)	(79)
Guided walks	(39)	(79)
Boat rentals	(37)	(70)
Bilingual Services	(9)	(73)
(C) Other Services:	%	%
Canteen	(41)	(62)
Grocery store	(15)	(51)
Laundromat	(9)	(34)
Garage	(5)	(27)

Source: Market Segmentation Study, 1983

Jeremy Bay Campground, for practical purposes, is now approaching the limits of its capacity during the peak summer months. Camping was expected to increase at either 2.6 percent or 3.1 percent per year depending on whether either Development Option One or Two was selected. The actual increase in usage corresponds to the scenario forecast for Option One.

TABLE 4: JEREMY BAY CAMPGROUND USAGE (PARTY NIGHTS)

Season	1971	(Percent per year)	1976	(Percent per year)	1980
Peak	12,477	(4.5)	15,256	(2.7)	17,307
Shoulder	3,824	(6.0)	4,979	(2.5)	5,607
Total	16,301	(4.8)	20,235	(2.6)	22,914

Source: Park Use Statistics

Since 1980 usage of Jeremy Bay Campground has not increased during the peak months of July and August.

TABLE 5: JEREMY BAY CAMPGROUND OCCUPANCY

(A) Season (%)	1980	1981	1982
Peak	(84.9)	(83.2)	(83.8)
Shoulder	(14.0)	(15.0)	(13.6)
(B) Week (%)			
Weekend (a)	(88.2)	(86.0)	(87.0)
Weekday (b)	(82.4)	(81.0)	(81.0)
(C) Days			
100% +	21	22	20
90% +	34	38	32

Source: Park Use Statistics

Note: (a) Weekend days include Fridays, Saturdays, Sundays and Public Holidays.
(b) Weekdays include Monday-Thursday, excluding Public Holidays.

Where the occupancy rate exceeded ninety percent of capacity on only twelve nights in 1973, over the last three years, the occupancy rate has exceeded ninety percent on over thirty nights during the peak season.

Over four hundred parties are turned away each season which do not place their names on a waiting list. Of those parties who do place their names on a waiting list, at least twenty percent do not return when a site becomes available. Jeremy Bay usually exceeds its capacity on weekends during the summer season.

TABLE 6: JEREMY BAY CAMPGROUND WAITING LIST

Season	1980	1981	1982
Parties	1382	1239	1496

Source: Kejimkujik National Park

There are three campgrounds within fifty kilometres of Jeremy Bay which would be affected by the proposed expansion. The current capacity of these campgrounds is 300 visitor parties. Although these campgrounds are increasingly catering to recreational vehicles, only 182 out of the existing 300 sites are serviced. According to the information supplied by Kejimkujik National Park, overflow demand would account for a minimum of thirty and a maximum of eighty percent of the occupants of unserviced sites in campgrounds outside the park. A sixty site expansion at Jeremy Bay could effectively decrease the usage of unserviced campsites by at least fifty percent. Where the amount of business generated from the overflow from park campgrounds is not sufficient to make a campground operation viable, the loss of business due to a premature expansion of Jeremy Bay could be sufficient to force a marginal operation out of business.

3.0 PROJECT DEFINITION

Although preliminary approval has been given for the design of the proposed campground loop, construction has been postponed.

The Park should monitor the following trends:

(a) unsatisfied demand for unserviced tent-only campsites from park waiting lists and the number of turnaways at the Park entrance and VRC;

(b) plans of private sector campground operators within thirty kilometres of the Park to phase-out or add-to the number of unserviced sites in their campgrounds; and,

(c) usage of the existing walk-in campsites which do not seem to be that popular.

CASE STUDY - 2

KOUCHIBOUGUAC SOUTH
CAMPGROUND EXPANSION

The major objective of the case study is to point out the importance of the preliminary screening of potential adverse socio-economic impacts in project proposals. The initial screening allowed the region to determine whether or not the proposed expansion would adversely affect demand for private campground facilities. Camping trends in the area were estimated and user projections for the campground were prepared.

1.0 PROJECT

1.1 Forecast Cost - (1982 $) Class C Estimate

Total	1981/82	1982/83	1986/87
1,154.0	91.5	539.5	523.0

1.2 Planning Phase - Definition

1.3 Management Objectives

This expansion would meet the current demand for camping in the park and bring the existing campground up to a more economical size.

An expanded campground would benefit local business establishments around the park and would provide the local public with a greater opportunity to participate in Park experiences and programs.

1.4 User Requirements

The most recent project proposal calls for an additional 80 campsites along with related facilities, such as a two way access road, a one way campground road, a playground and combined service buildings and kitchen shelters. Related utilities and services would include water, power and sewage disposal. In the new proposal, the marine aspect would be both visible and audible, and the more open space would provide relief from insects.

1.5 Comments

A visitor market forecast was not prepared as part of the project proposal. A Park visitor survey was conducted during the summer of 1981, although a final report on this study was not available at the time the project was submitted for approval. Data presented in support of the proposal could be updated at a later date, based on the 1981 survey results. In the meantime, the following section will rely mostly on a 1976 survey of visitors to Kouchibouguac National Park.

2.0 PROJECT CONCEPT

In 1978 Atlantic Region included in its long term capital program a proposal for the expansion of the Kouchibouguac South campground. In 1981 a proposal for this project was presented whereby the campground would be expanded by 157 sites along with related facilities and services. After consultation with operators of private campgrounds located near Kouchibouguac National Park, and preliminary site investigation, the initial proposal was scaled down by half to 80 new sites. It was felt that an expansion of this magnitude would not negatively impact on the private businesses concerned.

2.1 Option Selection Unavailable

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts

There are three campgrounds within easy driving distance of Kouchibouguac National Park. Two of these, Parc Daigle and Evergreen Acres, are privately owned and are immediately adjacent to the Park. These campgrounds have undergone recent expansions and now have a total capacity of approximately two hundred campsites, including both serviced and unserviced sites as well as overflow areas. Services such as a swimming pool and hot showers are also provided. The third, a provincial park campground with approximately forty sites, is leased to a private operator.

Several socio-economic factors suggested that expansion of the Kouchibouguac South campground to 300 sites would not adversely affect these private sector operations. Kouchibouguac National Park is located in Kent County, on a major east coast tourist route, and is becoming a major destination area. Since 1974, the proportion of tourist party nights spent in campgrounds and trailer parks in Kent county has increased from 21 percent to 33 percent, while average length of stay has increased to over 4 nights per tourist party.

From 1976 to 1981 the average annual increase in visits to Kouchibouguac National Park was 10.3 percent, as compared to the national average of 3.1 percent and a regional average of 2.6 percent. During the same period there has also been an average annual increase of over ten percent in the number of party nights spent in the Kouchibouguac South Campground during the peak season, and an annual shoulder season increase of almost 25 percent. In 1981 the campground was practically filled to capacity during July and August. Based on an analysis and projection of recent trends it was estimated there would be a minimum short fall of at least fifty sites within five years. Already the number of turn-aways at the campground averages 100 a day during the peak summer season.

Kouchibouguac National Park does not serve the same type of visitor market as do the private campgrounds which attract many pass-through tourists travelling on Highway 11. There is in fact still considerable potential for expansion in the accommodation sector in the area, particularly with regards to commercial roofed accommodation. In addition, park staff believe that operational constraints place an effective limit of 300 sites on future expansions to Kouchibouguac South.

After consultation between the park superintendant and the two private entrepreneurs who operate campgrounds near the park, it appeared that these operators are optimistic and do not feel threatened by the proposed scaled down campground expansion.

2.3 Visitor Market Forecast

2.3.1 Visitor characteristics

A 1976 visitor survey conducted in Kouchibouguac National Park indicated 56.9 percent of park visitors were residents of New Brunswick.

TABLE 1: ORIGIN OF VISITORS: KOUCHIBOUGUAC NATIONAL PARK, 1976.

Origin	%
New Brunswick	56.9
Other Atlantic Provinces	4.5
Québec	13.4
Ontario	13.4
Other Canada	1.4
USA & Foreign	10.4

Source: Park Visitor Survey, 1976.

Table 2 shows that, for most visitors from outside the Atlantic Provinces, the visit to the park was an unplanned stop. However, half of the visitors from Québec had planned to stay at the park during their trip.

TABLE 2: PROPORTION OF VISITORS TO KOUCHIBOUGUAC NATIONAL PARK WHO MADE A PLANNED OR UNPLANNED STOP AT THE PARK, BY VISITOR ORIGIN, 1976

Origin	Planned Stop (%)	Unplanned Stop (%)
New Brunswick	18.0	32.2
Other Atlantic Provinces	41.9	47.0
Québec	50.7	42.5
Ontario	38.1	59.1
Other Canada	25.0	71.5
USA & Foreign	38.4	59.8

Source: Park Visitor Survey, 1976.

Overnight visitor parties stayed an average of 1.9 nights in the Park. The average park visitor party size was estimated to be 3.6 persons. It was also estimated that 72 percent of the park visitor parties used one of the park's campsites during their stay in the area. (Park Visitor Survey, 1976.)

According to a Provincial Tourism Auto-Exit survey conducted in 1980, the majority of non-residents travelling in Kent County used passenger cars as their mode of transportation (Table 3).

TABLE 3: TYPE OF VEHICLE USED BY NON-RESIDENTS TRAVELLING IN KENT COUNTY, 1980

Type	%
Passenger car	66.9
Car with camper trailer	8.6
Camper truck	16.2
Camper van	7.8
Motorcycle	--
Other	0.5

Source: Tourism New Brunswick, Auto-Exit Survey 1980

Non-resident tourist parties to Kent County stayed over four nights on average in 1980 (Memo, 1981). Almost all non-residents staying overnight in Kent visited the park.

2.3.2 Visitation trends

The Park region has strong tourism potential. Designated by the province as an area of prime tourism development, this region is attracting tourists, especially Canadians, in increasing numbers. Kouchibouguac National Park also has a strong regional attraction capacity. According to a 1980 Auto Exit Survey (Tourism New Brunswick,) 98 percent of the 13,172 non-resident tourist parties to New Brunswick that spent at least one night in Kent County (ARO 1981 Operations Review) visited Kouchibouguac National Park.

In fact, Kouchibouguac National Park visitation has increaed from 136,470 visitors in 1976 to 213,580 visitors in 1980, an average annual rate of growth of 10.25 percent. This represents a higher than average growth rate than that for other national parks in Canada and the Atlantic Region (Table 4).

TABLE 4: AVERAGE ANNUAL RATE OF GROWTH IN VISITATION (1976-1980)

National Park Visitation	Average Annual Increase (1976-1980)
Canada	3.06%
Atlantic Region	2.63%
Kouchibouguac	10.25%

Source: Kouchibouguac National Park, Operations Review, 1981

As Table 5 shows, the use of campgrounds by overnight tourist parties in Kent County is increasing while other types of accommodation have in general witnessed a decrease in use by the same type of visitors.

TABLE 5: ACCOMMODATION USED BY OVERNIGHT TOURIST PARTIES IN KENT COUNTY

Accommodation Used	Year 1977	Year 1980
Campground	25.6	37.0
Friends & relatives	39.4	23.0
Commercial	16.1	13.0
Cottages	7.9	10.0

Source: Tourism New Brunswick 1977, 1980

Kouchibouguac National Park, through its main campground Kouchibouguac South, has benefitted from this increased camping activity. As Table 6 illustrates, camping activity at the campground has increased since 1976 while provincial parks located in the same area have seen their camping activity decrease since that same year.

TABLE 6: CAMPING ACTIVITY: KOUCHIBOUGUAC SOUTH CAMPGROUND AND NEARBY PROVINCIAL PARK CAMPGROUNDS - 1976 TO 1980

Camper Parties	Years 1976	1977	1978	1979	1980	Av. Yearly Variation (%)
Kouchibouguac South	5,730	6,325	9,235	10,064	8,626	+10.1
Provincial Parks	54,911	49,915	46,655	49,732	47,229	-14.0

Source: Atlantic Regional Office, 1980
Tourism New Brunswick

Note: Provincial Parks in region -Jardin, Parlee Beach and Murray Beach.

2.4 Life Cycle Cost Analysis Unavailable

2.5 Estimation of Economic Benefits Unavailable

3.0 PROJECT DEFINITION

The project proposal for the expansion of the Kouchibouguac South Campground is justified mostly by the fact that the existing facilities are filled to capacity for a good part of the peak summer season (July and August). However, to estimate the number of additional sites required to satisfy the forecasted increased demand, a projection of future usage of the facility based on past occupancy trends is required.

3.1 Evaluation of Economic Impacts Unavailable

3.2 User Projections

In 1981 overall visitation to the Kouchibouguac South Campground had increased 100 percent since the establishment of the facility. For the three seasons starting in 1978, the 143 site campground had been practically full from the end of June to mid-August. During this annual two month period the refusal rate, that is campers who had to be turned away because the campground was full, averaged 100 per day. In addition, only 15 to 20 sites are turned over daily. In fact, from 1976 to 1980 (inclusive) the number of nights during July and August when the campground was 100 per cent full, went from two to thirty. As Table 7 illustrates, during that same period, peak season occupancy rates (i.e. the number of party nights divided by the number of site nights) at the Kouchibouguac South Campground increased by 9.7 percent annually.

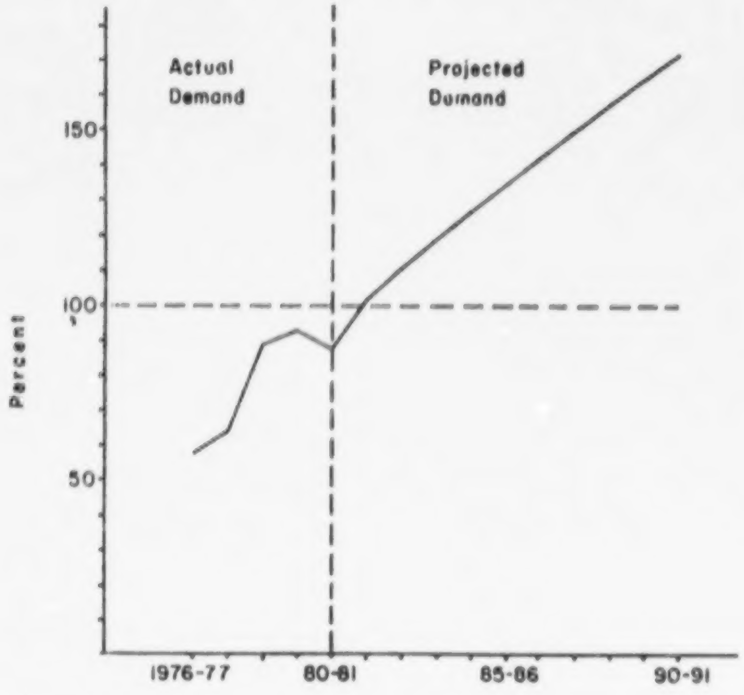
TABLE 7: PEAK AND SHOULDER SEASON OCCUPANCY RATE, KOUCHIBOUGUAC SOUTH CAMPGROUND, 1976-80

Season	1976	1977	1978	1979	1980	Av. Annual Increment
Peak	57.01	63.89	88.37	92.15	84.6	9.68%
Shoulder	5.71	6.48	11.86	17.40	20.52	51.87%
TOTAL	27.95	33.04	44.35	48.09	55.99	20.06%

Source: Operations Review, 1981

From the trend in peak season occupancy rate of the 143 site Kouchibouguac South Campground from 1976/77 to 1980/81, future use at the campground was fitted to a demand curve thereby providing a five year and ten year projection of demand (see Figure 1). It was estimated that peak season demand will be 195 sites per night by 1985, and by 1990 this demand will have increased to 250. By subtracting the projected demand from the actual number of sites a shortfall in the number of available sites is estimated at 50 by 1985 and at 105 by 1990.

FIGURE 1: KOUCHIBOUGUAC SOUTH CAMPGROUND (JULY - AUGUST) - PERCENTAGE OF SITE CAPACITY USED 1976/77 - 1990/91



Source: Operations Review, 1981.

CASE STUDY - 3

JOHNSTON CANYON

CAMPGROUND REHABILITATION

The focus of this case study is the illustration of how visitor market analysis, using basic park use data, can assist in support of a project proposal of this type.

1.0 PROJECT

1.1 Forecast Cost -(1981 $) Class B Estimate

Total	1980/81	1982/83	1983/84	1984/85
676.0	1.0	165.0	215.0	295.0

1.2 Planning Phase - Predesign

The need to rehabilitate the Johnston Canyon Campground has been identified since the early 1970s. A rehabilitation project was initially presented in December 1979, and at that time the scope of the proposal and the required funding were relatively limited. Rehabilitation was to be performed during the 1981/82 fiscal year for an estimated $140,000, based on Class C estimates. Because of the limited scope of the proposal, no socio-economic statement was required.

An expansion project, planned to begin in fiscal year 1985-86 would add 100 campsites to the campground.

1.3 Management Objectives

The Park Management Plan identifies the need to provide further visitor services in the way of walk-in campsites, campground expansion, proper campground entrance road/kiosk, and improvement to the overall utility system. Renovation and rehabilitation of the campground will allow the facility to be brought up to an acceptable Parks Canada standard, prevent further deterioration, and avoid severe public criticism.

Rehabilitation of washroom and sewage facilities will bring these services up to health standards. At present toilet buildings suffer from unacceptable floor surfaces, cracked and chipped toilet and sink fixtures, and bacteria growth in dark, wet corners of cracked and broken plastic and concrete surfaces. As for sewage, surface ponding is evident at plugged and collapsed sewage lines and disposal fields.

Finally, the relocation of the present entry way is necessary to meet existing "Good Roads Standards" which require adequate site distances for entrance and egress into and from the campground and the separation of multi-facility entrances all presently at the same location, entering a secondary highway which carries, on a daily basis, heavy volumes of traffic. The present traffic circulation situation at the Johnston's Canyon Campground has the entryways to the campground, the Trailhead parking facility, and the Johnston's Creek bridge and the Johnston's Canyon Lodge all clustered within a distance of approximately 230 to 300 metres.

1.4 User Requirements

In 1981 there were 140 campsites at the Johnston Canyon Campground. Figure 1 contains the concept plan of the facility including proposed renovations, the planned expansion site and the vehicular travel pattern.

The rehabilitation proposal was developed as a solution to on-site and operational problems for the campground. According to this proposal, rehabilitation of the facility would include the following work:

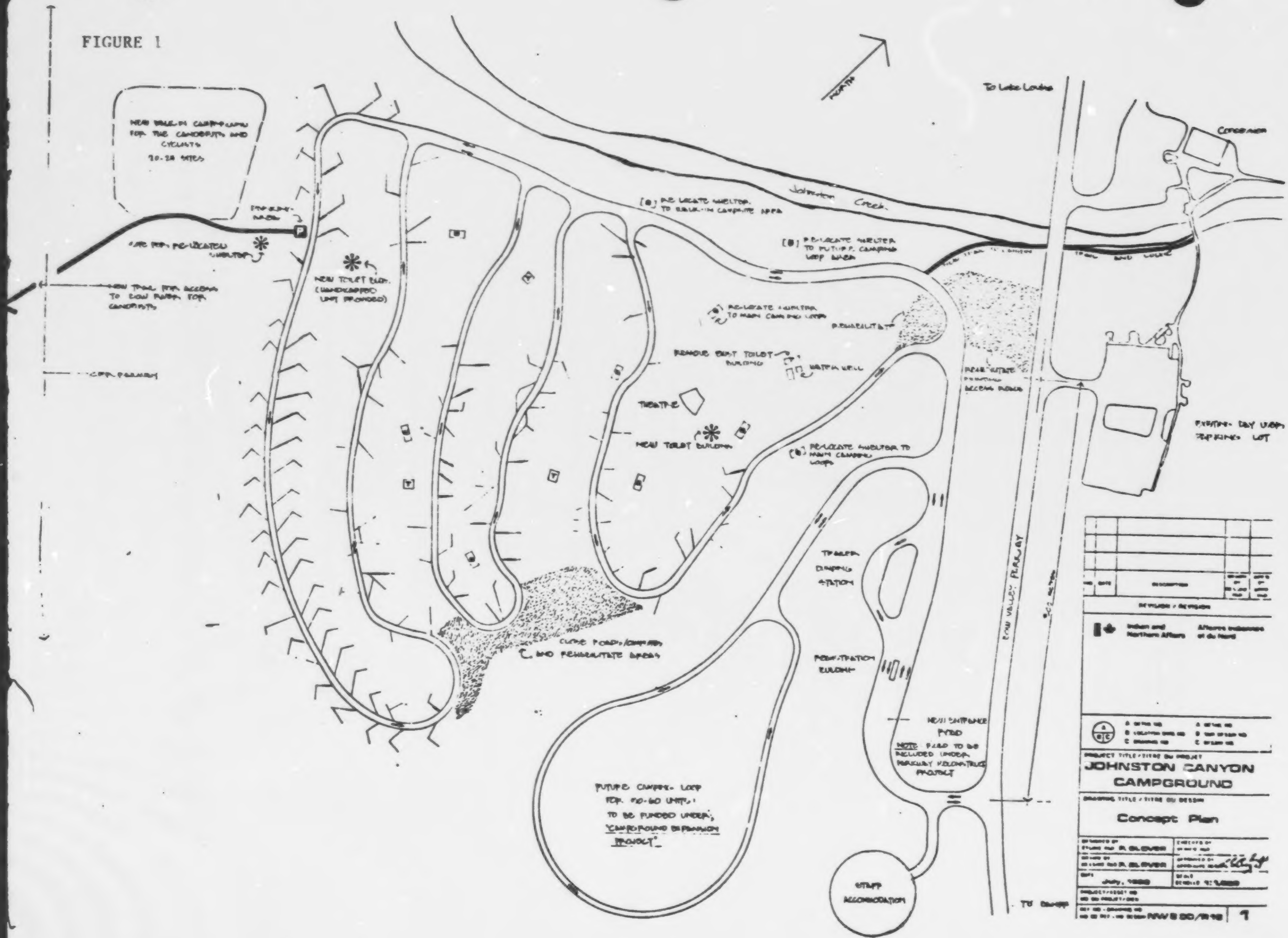
- construct new campground entryway complete with kiosk and r.v. sewage dumping station, relocate staff housing and services, design and construct new entryway access to connect with existing campground circulation roadways and connection with future campground expansion access roadways;

- renovate and/or reconstruct the public toilet buildings and associated utility services;

- reconstruct campsites and associated camping facility and furnishing including all required terrain rehabilitation. (Figure 1.)

Because poor toilet facilities are the main source of complaint, renovation of this service has been placed ahead of site and grounds rehabilitation. Finally, the existing entrance will have to be changed because of line of sight and congestion created by the Bow Valley Parkway, the construction of the new bridge over Johnston's Creek, and the Johnston Canyon Trailhead which have all had detrimental effects on the present entrance.

FIGURE 1


NEW WALK-IN CAMPGROUND FOR THE CANOEISTS AND CYCLISTS
20-25 SITES
PARKING AREA
SITE FOR RE-LOCATED SHELTER
NEW TRAIL FOR ACCESS TO BOW RIVER FOR CANOEISTS
C.P.R. RAILWAY
NEW TOILET BLDG. (HANDICAPPED UNIT PROPOSED)
NORTH
To Lake Louise
Johnston Creek
[B] RE-LOCATE SHELTER TO WALK-IN CAMPSITE AREA
[B] RELOCATE SHELTER TO FUTURE CAMPING LOOP AREA
NEW TRAIL TO CANYON
TRAIL AND WALKS
CONCESSION
[B] RELOCATE SHELTER TO MAIN CAMPING LOOP
REHABILITATE
REMOVE EXIST TOILET BUILDING
WATER WELL
THEATRE
NEW TOILET BUILDING
[B] RELOCATE SHELTER TO MAIN CAMPING LOOP
REHABILITATE EXISTING ACCESS ROAD
EXISTING DAY USE PARKING LOT
CLOSE ROADS/CAMPSITES AND REHABILITATE AREAS
TRAILER DUMPING STATION
REGISTRATION KIOSK
NEW ENTRANCE ROAD
NOTE: ROAD TO BE INCLUDED UNDER PARKWAY RECONSTRUCTION PROJECT
FUTURE CAMPING LOOP FOR 50-60 UNITS, TO BE FUNDED UNDER "CAMPGROUND EXPANSION PROJECT"
STAFF ACCOMMODATION
BOW VALLEY PARKWAY
TO BANFF
REVISION / RÉVISION
Indian and Northern Affairs
Affaires indiennes et du Nord
PROJECT TITLE / TITRE DU PROJET
JOHNSTON CANYON CAMPGROUND
DRAWING TITLE / TITRE DU DESSIN
Concept Plan
R. GLOVER
R. GLOVER
1

Johnston Canyon Campground is only one of several camping facilities serving visitors in Banff National Park. The campground operates for approximately 115 days between mid-May and mid-September of each year.

The rehabilitated campground will be maintained annually by the park without additional O&M person-years being required.

1.5 Comment

No visitor use trend is explicitly presented and subsequently no projections are derived either for the amount of traffic on the Parkway or at the Johnston Canyon Trailhead. This information, had it been presented, could have completed the analysis by providing quantitative measurements of the expected increase in use of the campground.

2.0 PROJECT CONCEPT

Over the last few years construction of the Bow Valley Parkway has taken place, along with the redesign and reconstruction of the Johnston Canyon Trailhead. Located adjacent to these facilities, the Johnston Canyon Campground will be the only major facility in the area still in need of repair.

The Johnston Canyon Campground has received, particularly during the last 10 years, very intensive use resulting in a complete worn out state of the buildings, furnishings, services and campsites.

2.1 Option Selection Unavailable

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts Unavailable

2.3 Visitor Market Forecast

The Johnston Canyon Campground, because of its location at the trailhead of the renowned Johnston Canyon Geological Interpretive Unit, is one of the more popular campgrounds in Banff National Park and receives a very high level of use throughout its operational season each year.

Although the Bow Valley Parkway Reconstruction Projects curtailed use of the campground during 1979 and 1980, use of the facility increased from a total of 9,588 occupied sites in 1975 to 10,389 occupied sites in 1978, an increase of approximately 10 percent (Table 1).

TABLE 1: NUMBER OF SITES OCCUPIED, 1975-1980

Seasons	Year					
	1975	1976	1977	1978	1979	1980
Peak *	7254	7347	7518	7727	6902	6262
Shoulder **	2334	2628	2870	2833	2073	1450
TOTAL	9588	9975	10388	10560	8975	7712

Source: Parks Canada, SED, Park Use Statistics, 1976-77 to 1980-81.

* July-August
** May-June and September.

The seasonal occupancy rate therefore increased during the same four year period (Table 2).

TABLE 2: OCCUPANCY RATES FOR EACH OPERATING SEASON 1975-1980

	Operating Season						
	1975	1976	1977	1978	1979	1980	Total
No. of operating days	121	113	114	114	114	121	697
Occupancy Rate*	56.6%	63.1%	65.1%	66.1%	56.2%	45.5%	58.6%

Source: Socio-Economic Statement, 1981.

* During the 1975-1978 period the campground was opened for a total of 462 days. The average occupancy rate for the period was 62.6 percent.

$$\text{Occupancy} = \frac{\text{total no. of sites occupied during season} \times 100}{\text{total no. of days during season} \times 140 \text{ (no. of sites)}}$$

During the 1975-80 period the campground was filled to capacity 57 percent of the operating time, and to 80 percent capacity 72 percent of the time. Taking the 1975-78 period only, these proportions rise to 60 percent and 76 percent of the time respectively (Table 3).

TABLE 3: % OF TIME DURING 1975-80 AND 1975-78 PERIODS WHEN CAMPGROUND WAS FILLED AT 80%, 90%, AND 100% CAPACITY

Proportion of time during which rates were reached	Occupancy Rates		
	80%	90%	100%
1975-1980	72%	64%	57%
1975-1978	76%	67%	60%

Source: Socio-Economic Statement, Johnston Canyon Campground, 1981.

It is expected that the reconstruction of the Bow Valley Parkway to the Johnston Canyon Campground, compounded by the redesign and reconstruction of the Johnston Trailhead, will improve access to the facility and result in increased pressure on the campground.

PART 3 - TRAILS

A. Introduction

1.0 TRAILS

There are three phases of project planning during which socio-economic analysis and impact assessment have a role to play: concept, definition, and predesign.

When the project is presented for discussion and review, the project sponsor is responsible for describing the rationale for the project, including the functional requirements to be met. The types of proposals which may be presented for review and approval include expansions or improvements of existing trails, as well as the development of new trails. Factors such as overuse, safety, and user dissatisfaction are important considerations in proposals to expand or improve existing trails. For new trails an adequate user profile and a reliable estimate of trends in user demand should be provided. The rationale for the project should also include a thorough options analysis where appropriate. An options analysis should include a full life cycle costing for each option examined. Generally speaking, the need for an options analysis should arise in deciding how extensive a trail system is required and in reviewing ways and means of controlling unacceptable resource impacts. The regional impacts of trail development and maintenance are not likely to be significant due to the unobtrusive nature and relatively low cost of many trail systems. However, trail development projects are often proposed as seasonal job creation programs. As well, trail upgrading projects may involve substantial increases in operating and maintenance costs.

After an option is selected, during the definition phase of project planning, a project brief is prepared. A budget, work plan, and implementation schedule are proposed for review. Any remaining data collection and analysis thought necessary should be identified at this time. For example, additional information may be required such as the level of experience and conditioning of trail users in order to establish guidelines for the length and level of difficulty of the trail. Guidelines for later planning and design decisions should be set.

During the predesign phase of project planning functional requirements may be further refined or updated. User projections may be prepared to guide the implementation of the project.

The types of project planning decisions which should be influenced by socio-economic factors include:

(a) decisions to expand or improve existing trails;

(b) decisions to develop new trails;

(c) decisions about the phasing of implementation;

(d) decisions about siting, access, and parking at trailheads;

(e) decisions about function, capacity, and level of amenity.

1.1 Visitor Market Analysis

The range of possible trail functions include:

(a) hiking - overnight (backcountry)
- day use (front country);

(b) interpretive nature;

(c) recreational - outdoor sports (e.g., cycling, cross country skiing);

(d) special needs - handicapped (e.g., wheelchairs).

A profile should be prepared identifying the characteristics of potential trail users. This profile will vary depending on the range of possible trail functions being considered. Origin, party size and composition, length of stay, as well as the mode of transportation and points of access likely to be used by area visitors are examples of the basic information required. While pull-off traffic is a major source of demand for day use or interpretive trails, it will not contribute in a major way to the use of backcountry hiking or cross country ski trails, for example, because of the equipment and preparation required. Additional information about the recreational participation rates, equipment usage, skill or proficiency levels of various user groups may be necessary in order to plan these types of trails.

Visitor preferences with respect to ease of access, level of contact with other users, and the range of site amenities offered should be taken into account. The availability of alternative or competing recreational opportunities, as well as advance information and publicity, will also influence visitor choices.

1.2 Siting and Access

The proximity of trails to access roads and regional population centres affects the level and distribution of use. That is to say, users inevitably travel to the same attractive, easily accessible areas. When combined with other site conditions, an unacceptable level of resource degradation may occur. Easily accessible sites may be subject to vandalism and other types of misuse as well. These factors must be considered in trail design and management.

1.3 Capacity

The expected level of use and site specific conditions influence trail capacity. Management or design strategies may be necessary to control unacceptable resource degradation. Management strategies include advance information and orientation, issuing permits, establishing quotas and closing out areas while they regenerate. Designated campsites can be used to concentrate use at hardened or more durable sites or to disperse use in fragile areas. Design strategies include construction of tent pads or platforms, using bridging materials over wet or poorly drained soils, paving or hardening the surface of trails. The choice of methods of waste disposal and sources of potable water at overnight campsites also depends on expected use and resource impacts. Plantings may be used to control erosion, compaction or noise levels. The cost differentials associated with any of the development or maintenance options proposed should be related to the expected level of use.

B. Checklist

1. Market identification -

   (a) Have the size and characteristics of potential user groups been identified?

   (b) Have trends in use been estimated?

   (c) Has the effect of alternative and accessible trail systems on the project been evaluated?

2. Siting and accessibility -

   (a) Has the impact of siting and accessibility on the level and distribution of use been considered?

3. Capacity -

   (a) Have the cost differentials associated with trail development and maintenance options been related to the expected level of use?

C. Case Studies

Case Study - 1
Pukaskwa Coastal Trail

Case Study - 2
Lachine Canal Bicycle Path

Case Study - 3
Johnston Canyon Interpretive Trail

Case Study - 4
Maligne Canyon Self-Guided Trail

CASE STUDY - 1

PUKASKWA COASTAL TRAIL

This case study illustrates the type of socio-economic substantiation that is required when a new trail is planned in a National Park. Only basic data are used in support of the trail concept. The potential market, level of usage and economic benefits to the region are identified from secondary source data.

1.0 PROJECT

1.1 Forecast Cost - (1981 $) Class B Estimate

Total	Previous	1981/82	1982/83	1983/84	Future Years
858.0	(317.4)	120.0	121.0	133.0	484.0

Capital person-years - 5.1

The current maintenance costs are 22.0 (1980/81) on the completed portions of tne Coastal Trail.

1.2 Planning Phase - Concept

1.3 Managment Objectives

The Managment Plan for Pukaskwa calls for an extensive trail network within the Park. Interpretive trails in the Hattie Cove and Oiseau Bay areas will appeal primarily to day users. Longer hiking trails along the shoreline and within the park's interior will provide for extended hiking trips. The coastal trail is to provide the main link for the interior trails which are to be developed at a later date, if warranted by demand.

The Coastal Trail is the main trail in the park with other trails planned to exit or begin off of this trail. They are - the trail to Tip Top Mountain (11.2 kilometres), the Cascade Trail (62.8 kilometres), the Interior Trail which joins Widgeon Lake, Gornupilagama Lake and Lurch Lake (35.4 kilometres), the Lurch Lake Trail to Oiseau Bay (29 kilometres), and the Pukaskwa River Valley Trail (40.25 kilometres).

Construction of the coastal hiking trail has been underway since 1978/79. To date, approximately 15 kilometres of trail has been completed to a standard which does not impose a real danger to users. The remaining 55 kilometres requires upgrading in order to provide a safe trail of uniform standard. Approximately 41 percent of the trail users feel the trail and related facilities should be improved. Another 23 percent requested improved trail maintenance. A systematic and less confusing route marking program was requested by 21 percent of trail users. (Bird and Hole, 1981.)

The proposed improvements would satisfy the concerns of existing users and likely attract additional trail users once the trail's reputation was established.

1.4 User Requirements

The proposed coastal trail will function as a primitive backcountry hiking trail with designated campsites.

1.5 Comments

Only very basic information is currently available, and additional information may be required, to guide the implementation of the trail system and to update the design requirements as the needs and abilities of trail users become better known.

2.0 PROJECT CONCEPT

2.1 Option Selection

Unavailable

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts

Unavailable

2.3 Visitor Market Forecast

The users of backcountry trails in Pukaskwa tend to be younger (up to 57 percent are under the age of twenty-five) and well educated with some form of post-secondary education. Many are very experienced hikers: approximately forty percent have over five years experience. The average party size is 3.25 persons. Between one half and three quarters of the parties have between two to four persons. Parties of ten or more people account for five percent of the market.

Over half of the parties enter the park by boat or canoe, and the remainder enter on foot. About sixty percent of the hikers travel distances of 13 kilometres of less a day. Less than twenty percent hike more than 19 kilometres a day. The average length of stay is about 3.65 days. Trips of a week or more represent less than ten percent of the visits. Trails are favoured which require physical exertion and this desire increases with experience. (Bird and Hole, Study of Trail Use at Pukaskwa, 81-DOE-PUK-016.)

The presently uncompleted trail system does not reflect the full potential of visitation which could be achieved by this park. The principal sources of demand for increased trail use would be:

(a) traffic from the Trans-Canada highway;
(b) other park users (boating, canoeing); and
(c) marketing of trail system.

In 1981, 385 park visitors used the trail. The above figure is an understatement of actual trail use because of the numerous access points which do not allow accurate registration. Following a recent marketing program, use of Provincial Parks in the region increased by 25%. Considering the unique opportunities provided by Pukaskwa, 25% growth following publicity would be a minimum increase, followed by a period of stabilization after two to three years.

The recently completed access road will allow highway traffic greater access to the park. This portion of demand constitutes those persons enroute to another destination. Initially highway traffic pull-offs will visit the day use areas, however, increased awareness of the park's trail system may lead to planned hiking trips in the future.

A recent study on Trail Development at Pukaskwa National Park suggests trail use will reach between 690 and 1172 persons by 1990 (Bird and Hole, 1981).

The focus of the trail system is primitive overnight backcountry use and although other parks in the region also have trail systems, their trails are primarily for frontcountry day use.

There is the possibility of developing cross country ski trail systems, however, the major markets would be less inclined to visit the park for skiing due to the large number of existing ski trails elsewhere. Ski trail users in Canada are primarily day users. An extensive ski trail network in North Bay, Ontario, oriented towards extended overnight trips received limited use and has been modified for day use.

2.4 Life Cycle Cost Analysis Unavailable

2.5 Estimation of Economic Benefits

Trail development is labour intensive: over seventy percent of the projects' budget is allocated for salaries and wages. Eleven seasonal jobs will be created over a five year period. These jobs include one supervisor, one lead hand, two chain saw operators, and seven labourers. These persons could be recruted locally.

CASE STUDY - 2

LACHINE CANAL

BICYCLE PATH

The following case study demonstrates the type of socio-economic analysis required for presentation of a project of this type at the conceptual planning stage. The market analysis, which is the focal point of this example, uses a variety of secondary data sources in support of the proposal.

1.0 PROJECT

The Lachine Canal, located in the southwest sector of the Island of Montréal, was closed to vessels in 1968. In 1974 Transport Canada transferred the canal and its banks to Public Works Canada. During the 1977-78 fiscal year, Public Works undertook a two-year program to improve property on the Lachine Canal land. One element of the project involved the development of a bicycle path along the banks of the canal. This path has to be paved. Approximately 11 kilometres of the path was to be completed in 1977-78, and another section, approximately 3 kilometres in length, in 1978-79. In 1978, Public Works Canada transferred the property to Parks Canada, which ensured that some Canal development projects, including the bicycle path, would be completed. This project was part of the canal redevelopment plan designed to preserve it as a heritage resource and to redevelop it for cultural, social and recreational purposes.

The bicycle path construction project was originally to be continued in 1978-79 with the connection of two sections. However, following a Treasury Board decision, the project was delayed. After pressure to speed up development, the final stage of the bicycle path project was given the go-ahead in 1980 and is still continuing. The completed sections of the path have been open to the public since 1980.

1.1 Cost Estimate (1983 $) Class C Estimate

Total	Previous	1982/84	1983/84	Future
983.6	371.0	---	10.3	602.3

1.2 Planning Phase - Concept

In 1929, the Historic Sites and Monuments Board of Canada declared the Lachine Canal an area of national historic interest. The 13.7 kilometre canal flows through five municipalities in the southwest section of the Island of Montréal.

Despite a relatively limited recreational potential, the property of the Lachine Canal lends itself to pleasure craft and certain linear land-based activities. In this respect, the bicycle path would join two multi-purpose centres, one at Lachine and the other in the Old Port of Montréal. These centres represent the two major access points to the canal zone. The bicycle path would also be linked to the regional network of similar paths (see Figure 1), and would thus become a principal means of access to the canal zone. The bicycle path was conceived as an integral part of activities for development of the canal property, a project launched in 1977 by Public Works Canada and the five neighbouring municipalities.

The master plan for development of the Lachine Canal specifies that the bicycle path would be built on either shore of the canal, depending upon available space (i.e. not in areas that are too narrow). The master plan recognized the importance of non-motorized traffic along the canal because of its location in a highly industrialized zone and the resulting restrictions on road traffic (Parks Canada, The Lachine Canal Master Plan, Department of Supply and Services, Ottawa, 1979). The general path plan was included in a canal redevelopment plan prepared by Parks Canada (Parks Canada, The Lachine Canal, Re-development Plan).

The master plan implementation schedule indicated that completion of the land-based corridor and its integration with the regional network was a priority of the development project (Parks Canada, Lachine Canal Master Plan, Program, March 1979).

1.3 Management Objectives

The objectives of Parks Canda and its canal redevelopment project focus on preserving this heritage resource and its development by establishing public spaces and equipment for cultural, social and recreational purposes. The bicycle path fits these objectives since it facilitates access to the site (Master Plan, 1979) and to the interpretation scheme of each sector (Re-Development Plan).

1.4 Use Requirements

As an integral part of the land-based corridor along the canal, the bicycle path would run alongside it except at spots that are too narrow. Several walkways joining the north and south banks of the canal would be indispensable given the parallel points of interest on both sides of the canal, the superior potential of one bank in some sectors and the difficult access to several junctions from neighbouring streets (Master Plan, 1979). The path would also be linked to the regional network of bicycle paths and would provide access to resting places and junctions leading to other developments managed by municipalities through which the canal runs.

The land corridor on which the path is located would include existing or planned green spaces to be used as rest areas or picnic sites (Development Plan). A look-out could be developed at the eastern end of the path to provide a view of the port.

The asphalt-covered path would be operational throughout the year, and could be used not only by cycling and jogging, but also for cross-country skiing and snow-shoeing (Master Plan, 1979).

1.5 Comments

The socio-economic data used in support of the bicycle path project are taken from secondary sources. The information has been used to identify the situation pertaining to cycling in Ottawa and Greater Montréal, as well as to estimate future demand for this activity. The bicycle path project undertaken by Parks Canada began in 1978-79. The socio-economic data presented above thus relate to the period preceding implementation of the project. They are taken from an unpublished document prepared by the Socio-Economic Research Division of Parks Canada in Ottawa, probably in 1978.

2.0 PROJECT CONCEPT

2.1 Options Analysis Unavailable

2.2 Preliminary Examination of Potentially Adverse Socio-Economic Impacts Unavailable

2.3 Market Estimates

Over the past few years, cycling has rapidly grown in popularity in Québec. Between 1973 and 1977, the number of Québec households owning one or more bicycles rose from 448,000 to 770,000, an overall increase of 73.4 percent. As shown in Table 1, this represents a higher rate of growth than for Canada as a whole.

TABLE 1: ESTIMATED NUMBER OF HOUSEHOLDS OWNING BICYCLES (in thousands)

Year	Households with Bicycles	
	Canada	Québec
1973	1,825	448
1974	1,971	466
1975	2,266	546
1976	2,708	706
1977	2,852	777

Moreover, in 1977 the proportion of households with at least one bicycle was higher in Québec than elsewhere in Canada. This had not been the case in the preceding years (see Table 2).

TABLE 2: ESTIMATED PROPORTION OF HOUSEHOLDS OWNING BICYCLES IN CANADA AND QUEBEC (in '000)

Year	Total Number of Households		Households with Bicycles		%	
	Canada	Québec	Canada	Québec	Canada	Québec
1973	6,266	1,652	1,825	448	29	27
1974	6,493	1,721	1,971	466	30	27
1975	6,703	1,764	2,266	546	34	31
1976	6,918	1,832	2,708	706	39	39
1977	7,022	1,869	2,852	777	41	42

According to national surveys on participation in outdoor recreation activities, Québec has the highest participation rate for cycling and, since 1979, has had a higher growth rate for this sport than any other province (see Table 3).

TABLE 3: NUMBER OF PERSONS 18 YEARS OF AGE AND OVER WHO PARTICIPATE IN CYCLING (in '000)

Year	Canada	Québec
1969	125	145
1972	188	184
1976	284	341

Source: SERD, *Longitudinal Data on the Participation of Canadians in Outdoor Recreation Activities*, 1967-1976, Ottawa, 1977.

A 1976 survey (SERD, *Projections of Participation In Outdoor Recreation*, Ottawa, 1976- study prepared by the Bureau of Management Consulting, Supply and Services Canada) indicated that 43.6% of the Québec population over ten years of age participate in cycling. Although 56% of the 10-20 year age group cycled, the highest rate of growth between 1972 and 1976 was amongst the 30-44 year age groups (19%). This would suggest that the future growth of participation in this sport will essentially be found amongst adults, since the market for those under 20 years of age has reached the saturation point.

If the 1976 results are correct, this would mean that approximately 2.3 million Québecois over 10 years of age participated in cycling in the year. Of this number, 40 percent (i.e. 900,000 people, the proportion of Québecois residing in Greater Montréal) live in Greater Montréal. We may thus conclude that there is a heavy demand for bicycle paths in this region. The 20.8 kilometre St. Lawrence path would be very popular. The 1976 survey showed that 40% of cyclists on the path had covered the entire distance and the 60 percent of the users lived less than two hours from the site. It would thus appear that the bicycle path system is not adequate to meet current and anticipated demand in the Montréal region.

Although the above-mentioned 1976 survey predicted an average annual increased participation in cycling of two percent in Québec, the national survey statistics showed an average annual increase of 16.7 percent between 1972 and 1976.

Because of a growing interest in physical fitness, public reaction to traffic congestion and pollution, the new types of bicycles available on the market and the construction of several new bicycle paths, the average rate of growth between 1978 and 1983 should be 7% annually, and would then decline to a growth rate of 3% per annum. This estimate is based on the estimated growth in the number of cyclists between 30 and 44 years of age. This age group is growing rapidly, and participation by its members was 18% in both 1972 and 1976 (see Table 4).

TABLE 4: ESTIMATED NUMBER OF RESIDENTS (18 YEARS OF AGE AND OVER) IN GREATER MONTREAL WHO PARTICIPATE IN CYCLING

Year	Number of Participants
1976	900,000
1978	1,030,000
1980	1,180,000
1985	1,530,000

The estimated annual rate of growth in Québec will not be as high as that observed in 1972 and 1976 (16.7 percent), mainly because of the following two reasons:

a) slower population growth in Greater Montréal over the next few years (i.e. after 1978); and

b) end of growth in the participation rate by the 3-044 year old age group by the mid-1980's.

The high rate of growth of participation in cycling in the Montréal region in the past, as well as the current heavy demand on existing paths and the substantial estimated increase, justifies the bicycle path construction project along the Lachine Canal.

CASE STUDY - 3

JOHNSTON CANYON INTERPRETIVE TRAIL REHABILITATION

The following case study illustrates how even limited socio-economic data analysis can assist in providing necessary support for a project containing potentially major impacts. The analysis implied maintenance costs could be recovered by paving the trail.

1.0 PROJECT

The reconstruction and rehabilitation of the Johnston Canyon Interpretive Trail was initiated in 1972 and scheduled for completion in 1978. This project concentrated on the Trailhead to Lower Falls section of the trail with only minor improvements planned for the rest of the trail. However, because of contracting delays, work was carried out only from the Trailhead to Lower Falls portion of the trail, a distance of approximately 1,080 metres. In fact work on this section was not totally completed.

Reconstruction and rehabilitation of the trail from the Lower Falls to the Upper Falls, a 1,620 metre stretch, was therefore still required.

1.1 Forecast Cost - (1981 $) Class B Estimates

Total	Previous	1981/82	1982/83
1,207.5	603.2	172.0	432.3

1.2 Planning Phase - Predesign

Johnston Canyon has been a major visitor attraction since the early 1980's. Many years ago the Canyon Trail, protective fencing, viewpoints, etc., were constructed to a very low and unsatisfactory standard. With the intensive use the trail had been receiving, it has been severely impacted and was in need of rehabilitation. Already, sections of the trail have been relocated into the canyon to provide safer and better viewing opportunities.

A PIP submission presented in 1979 called for reconstruction and rehabilitation work to be performed on the Lower Falls to Upper Falls section of the trail. The design provided for a long lasting facility. Major components, such as viewpoints and cat walks, would be built to last 50 years. In view of the very large increase in the number of visitors on the trail between 1972 and 1981, a submission for increased project approval was presented in 1981. It would allow trails to be asphalted, thereby keeping environmental degradation in check.

1.3 Management Objectives

The project would meet the objectives of rehabilitation and improvement to an existing high use facility and the preservation of plant to provide a direct service to park visitors. Upgrading of the trail would also provide a satisfactory and safe experience for visitors to the heaviest used trail in Banff National Park.

1.4 User Requirements

The upgrading of the trail section completed in 1978 included the construction of toilet facilities, additional parking, picnic tables, a foot bridge and landscaping, all located in the area of the trailhead. The rehabilitation proposal presented in 1979 included the removal and replacement of deteriorated and unsafe protective fences, relocation and improvements to sections of the trail, reconstruction of old and construction of new viewing points and cat-walk sections, as well as rehabilitation of impacted areas. The 1981 project submission called for the asphalting of the trail and the alignment of a short section of it to keep visitors away from the Black Swift Nesting Area.

1.5 Comments

The project proposal submitted in 1979 did not present explicit socio-economic information in support of the project. Some alternative solutions were also presented at this point. The 1981 proposal, for its part, did contain some data concerning visitor use of the trail to the Upper Falls. This information was presented at the definition/predesign phase of planning, although the source of the data was not provided. An alternative to this proposal was also briefly discussed.

2.0 PROJECT CONCEPT

2.1 Option Selection

Several options concerning the status of the Lower Falls to Upper Falls section of the Johnston Canyon Trail were considered.

One option was to maintain the status quo (i.e. no rehabilitation). This alternative was rejected on the grounds that it would have resulted in further deterioration of the facility, environmental degradation, a low level of service and visitor experience, and a poor impression of Parks Canada.

Another option would have seen the Lower to Upper Falls portion of the trail closed until funds were made available. It was also rejected as it would have lowered service to visitors, which was said to be contrary to objectives.

A third alternative would have been not to asphalt surfaces of presently good trail sections. Although this would have initially been less costly, it was rejected because it would have resulted in a fragmented trail appearance, unsafe conditions during inclement weather, and trampling of adjacent vegetation.

The option that was selected called for the rehabilitation of the total Lower to Upper Falls section of the trail and the provision of long life facilities that would provide a safer visitor experience and ensure preservation of plant and long term annual cost savings.

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts

Unavailable

2.3 Visitor Market Forecast

Unavailable

2.4 Life Cycle Cost Analysis

Unavailable

2.5 Estimation of Economic Impacts

Unavailable

3.0 PROJECT DEFINITION

Information on visitor use of the trail was briefly presented in the 1981 PIP submission for increased project approval. It does not, per se, consist of user projections. However, since it was presented to further define the upgrading requirements, it is presented in this section.

3.1 Evaluation of Socio-Economic Impacts   Unavailable

3.2 User Projections

Over the last ten years (i.e. from 1971 to 1981) use of the trail has increased from 180,000 to 350,000 visitors per season. The average daily summer season use has been estimated at 2,500 visitors. A total of 45% of these daily visitors proceed to the Upper Falls which, over the season, represents 160,000 visitors. There are no reasonable means at management's disposal to limit visitatícn.

CASE STUDY - 4

MALIGNE CANYON SELF-GUIDED TRAIL

This case study shows that a knowledge of visitor characteristics would have been useful in interpreting the trail and in presenting information to the public.

1.0 PROJECT

Maligne Canyon Self-Guided Trail was proposed as part of the Interpretive Management Unit (1977) to enhance the visitors' experience by orienting park visitors to the features and facilities of Maliagne Canyon. Interpretation of the valley had been available through walks conducted by park naturalists a few times a week in the summer. This level of service was considered by management to be inadequate to meet demand.

Maligne Canyon has been open to the public since 1911 and has been very popular as Maligne Valley is famous for its spectacular canyons, mountains, deep mountain lakes and glaciers. There are outstanding, highly visible examples of erosion throughout the valley. Because the area has been intensively visited, the vegetation is badly trampled, and the fencing and bridges have deteriorated to such an extent that the area is considered hazardous to visitors. Rehabilitation of the site was undertaken from 1979 to 1982.

1.1 Forecast Cost (1980 $) Class A Estimate

Total	Previous	1979/80	1980/81	1981/82
494.6	104.6	---	220.0	170.0

1.2 Planning Phase - Predesign

In 1975 research was initiated on a predesign study for the redevelopment of the Maligne Canyon day use area including a series of integrated field surveys to determine the use of the site (use characteristics, visitor behaviour and perception of the hazard), a vegetation survey and impact assessment, the determination of key natural resource values, and the formulation of a detailed set of recommendations for redevelopment.

A PIP submission dated 79/11/21 called for continued improvements to the visitor use area as approximately 175,000 visitors (a "guesstimate" based on the 1978 Jasper Townsite Region Visitor Study) annually used the Maligne Canyon area, including the trails and bridges. Critical elements of the submission dealt with inhibiting further environmental impairment, and mitigating visitor congestion and visitor safety problems.

The contract awarded in 1980 as a result of the 1979 PIP's documentation covered the redevelopment of the trail system at Maligne Canyon and the installation of interpretive signage for Maligne Valley. Specific requirements included: grading, path surfacing, viewpoint definition, footbridge reconstruction, steel safety fencing, privies, hydroseeding, and signage. The contract amount was 220.0 (Class A, 1980 $). PIP's documentation stated no alternatives although six risk factors were outlined if approval for this project was denied.

1.3 Management Objectives

Redevelopment of the trail system and the installation of interpretive signs to meet the specific objectives of:

(1) repairing environmental damage sustained over 30 years; and

(2) providing a safe and satisfying visitor circulation network geared to accommodate a 1980's forecast visitation of over 200,000 annually.

1.4 User Requirements

The primary user requirement is for a safe experience at Maligne Canyon. From records dating to 1949, on average there has been one fatal and two serious accidents annually.

Secondly, visitors desire an enjoyable and interesting experience which redevelopment of the Maligne Canyon trails (and day use area) will accomplish by:

(1) improving the general appearance of the area which has the effect of inhibiting acts of vandalism;

(2) reinforcing a positive experience which inhibits visitor frustration and complaints; and,

(3) reducing user congestion as improvements are made to the trails and bridges.

1.5 Comments

Although park personnel knew improvements to the trail were required from an environmental and safety viewpoint, and that the installation of self-guiding interpretive media would make the visitor's experience more meaningful and remove demand on staff time, specific socio-economic information was unavailable.

In the summer of 1982 a Maligne Canyon Media Evaluation Study was undertaken to determine the effectiveness and success of the self-guided trail media. The measurable objectives analyzed were: information retained after reading the sign (mastery), information gained from reading the sign (efficiency), sign attraction (stopping power), text interest (holding power), pedestrian movement and visitor duration at Maligne Canyon.

Analysis indicated about 33 percent of the objectives of mastery/understanding were definitively met, 33 percent require further evaluation, with one-third definitively not meeting the objective. Only two of the 13 media met the objective for stopping power, although 11 media met the holding power criteria. About 45 percent of the visitors walked the lower part of the trail while 61 percent completed the upper portion of the trail. Approximately 70 percent of the visitors remained longer than 30 minutes, and all responded positively about Maligne Canyon, the trail experience and Parks Canada.

Further, the results indicated that the population fluent in English or French was less than expected, in fact, German was more common than French. There were fewer visitors under 12 years and over 60 years, and fewer travelling by tour bus than expected. The number of visitors with post-secondary education was radically different than expected implying that the media may have been written for a lower education level than the majority of visitors had, and that visitors were separated into sub-populations to a greater extent than had been expected. Although fine-tuning of the media can resolve these problems, more front-end socio-economic analysis could have anticipated the *de facto* situation thus saving on the fine-tuning costs.

Specifically the socio-economic data which would have provided useful information consists of: visitor origin; visitor characteristics (age distribution, education); and, group characteristics (family with children, couples). A market feasibility study could have assisted in forecasting levels of use.

2.0 PROJECT CONCEPT

2.1 Option Selection   Unavailable

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts   Unavailable

2.3 Visitor Market Forecast

The 175,000 visitors expected (as stated in the PIPS submission) was very "loosely determined" from the Jasper Townsite study. The Jasper Townsite study had estimated that 700,000 visitors to Jasper could potentially visit Maligne Canyon. This figure was reduced by half on two separate occassions to obtain the realistically estimated 175,000 visitors. No rationale was provided to explain the procedure by which the estimate was derived.

2.4 Life Cycle Cost Analysis

There will be a benefit of 0.5 person-years and $20.0 annually from the reduction of maintenance. Recurring O&M demands will require 0.1 person-years and $2.0 once every 5 years. This amortizes to an annual cost of $1.5 which reflects a considerable saving from the existing situation.

2.5 Estimation of Economic Benefits

The project submission stated that improvements to the trail combined with the installation of the self-guiding interpretive media would produce an O&M benefit of 0.1 person-years and $4.5 from the warden service accident duties. However, this may be more operational efficiency than an economic benefit as there is no estimation of how many new visitors will be drawn to the area related to this project.

PART 4 - OUTDOOR RECREATION

A. Introduction

1.0 OUTDOOR RECREATION

Outdoor recreation activities reflect how individuals choose to utilize their free time and discetionary income. Recreational activities are directly associated with, and dependent upon, a Park's resources. Of concern are the visitor's safety and protection of the resource to ensure that the resource will be available for future generations.

Recreational activities vary greatly according to season, weather, and available facilities. An investigation of parks and sites revealed some of the following types of activities and associated facilities:

Activity	Facilities
beach activities	change facilities, washrooms
boating, canoeing	docks (marinas)
scuba diving	docks
picnicking	tables, BBQ pits
playing	recreational complexes, playgrounds
fishing	docks
information gathering	VRC, interpretive exhibits
tennis, golf	courts, golf courses
walking, hiking	trails
skating	rinks
skiing	cross-country trails, or downhill runs

Some of these activities are compatible while others are mutually exclusive. All require some type of facility (roadside pull-offs, docks, parking lots) as well as some level of capital and O&M expenditure. Projects relating to these types of activities can involve construction of new facilities, improvements or expansion of existing sites, or closing some areas because of safety problems or environmental deterioration.

Socio-economic analysis and impact assessment may be required at some or all of the three planning phases: concept, definition or predesign. The analysis identifies the socio-economic factors critical to project planning decisions.

When the project is presented for discussion and review, the project sponsor is responsible for describing the rationale for the project including the functional requirements to be met. The types of proposals which may be presented for review and approval include modifications to existing facilities or activity requirements (e.g. trails) as well as development of new facilities. The rationale for the project should include a thorough options analysis where appropriate. An options analysis should include an impact assessment and a full life cycle costing for each feasible option.

After an option is selected, during the definition phase of project planning, a project brief is prepared. A budget, work plan and implementation schedule are proposed for review. Any remaining data collection and analysis required should be identified. Guidelines for later planning and design decisions should be identified.

During the predesign phase of project planning, functional requirements may be further refined or updated. User projections may be prepared to guide the implementation phasing.

As in the case of other proposals, the following decisions relating to outdoor recreation are influenced by socio-economic analysis and impact assessment:

a) the decision to build or not to build new facilities, to modify (renovate or expand) existing facilities, or to change current operating practices;

b) decisions relating to scale, function, and operating capacity;

c) decisions about site selection, access, circulation and parking; and

d) decisions about phasing implementation.

1.1 Visitor Market Analysis

The range of outdoor recreation activities is very broad and planning efforts relate to balancing demands and expectations of all potential users in an effort to satisfy as many as possible, while acknowledging resource, financial, zoning, and policy constraints. The physiography of a park or site offers general indicators of the possible recreational mix of activities. A profile should be prepared identifying the characteristics of potential activity users as well as a market feasibility study. Basic information required relates to: origin, party size and composition, length of stay, mode of transportation and access points. Further, consideration should be given to whether the majority of users will be drawn from by-pass traffic or are destination oriented. Additional information on participation rates, equipment usage, skill levels and/or carrying capacity may be relevant to some projects.

Visitor expectations and preferences respecting ease of access, level of contact with other users, and the range of site amenities offered should be considered. The availability of alternative and/or competing recreational opportunities, as well as advance information, publicity and signage, will also influence visitor choices.

1.2 Siting and Access

Outdoor recreation facilities are either destination nodes (e.g. ski hill) or an integral component of a complex (picnic area near a recreation complex). Siting of a facility depends on both the objective and the resource. Consideration should be given to: minimizing use conflicts, inhibiting vandalism and nuisance activities, minimizing future problems, and ensuring minimum O&M costs. Access routes should consider user safety and aesthetics.

1.3 Capacity

The expected level of use and length of stay influences facility design and use capacity and should be estimated through appropriate socio-economic techniques and review of similar facilities elsewhere. In areas where a high degree of uncertainty exists, a moderate level of development which incorporates incremental expansion options may be appropriate and desirable. Management and/or design strategies may be necessary to control unacceptable resource degradation. Circulation patterns, transportation modes, duration of operating season, loading, and party size all have bearing on parking capacity, heating system requirements (if necessary), waste disposal, and requirements for potable water. The cost differentials associated with any of the development of maintenance options should relate to the expected level of use, remembering that building for peak usage results in excess capacity and unnecessary recurring O&M costs.

B. Checklist

1. Market Identification -

   (a) towards which group is the project oriented;
   (b) is the objective clearly defined;
   (c) have the size and characteristics of potential user groups been identified;
   (d) have trends been estimated;
   (e) have all alternatives been evaluated?

2. Siting and Accessibility -

   (a) has the impact of siting and accessibility on the level and distribution of use been considered;
   (b) have transportation modes and vehicle types been considered for parking;
   (c) has vandalism been considered and its potential mitigated;
   (d) has consideration been given to minimizig O&M costs;
   (e) has visitor safety been considered?

3. Capacity -

   (a) have the average level of use and average length of stay been estimated;
   (b) have seasonality and length of operating season been considered;
   (c) have service requirements and loading factors been determined (washrooms, sewage disposal, potable water requirements, etc.);
   (d) is incremental expansion viable;
   (e) have similar facilities elsewhere been reviewed for scale and cost reference;
   (f) have cost differentials associated with level of development and maintenance options been examined?

C. Case Studies

Case Study - 1
Clear Lake Marina
Riding Mountain National Park

Case Study - 2
Clubhouse
Cape Breton Highlands National Park

Case Study - 3
Callander's Beach Day Use Area
Kouchibouguac National Park

Case Study - 4
Timber Swing Bridge Replacement
Rideau Canal

CASE STUDY - 1

CLEAR LAKE MARINA: RIDING MOUNTAIN NATIONAL PARK

This case study is an example of how existing studies can provide information which, when combined with socio-economic data provides substantiation for the scale of a project. In this case information was required to determine the number of wet and dry berths, the number of launching ramps, and the number of single and double parking spaces.

1.0 PROJECT

1.1 Forecast Cost - (1983 $) Class D Estimate

Total	Previous	83/84	84/85	85/86	86/87	87/88
2,521.4	44.2	59.9	109.3	193.2	291.8	1,823.0

1.2 Planning Phase - Concept

A marina has been proposed since the early 1960's for the Boat Cove area on Clear Lake in Riding Mountain National Park.

During the 1975 Riding Mountain National Park management planning process, the desire to see boating facilities moved from the pier to a new marina at the Cove was expressed (Parks Canada, A Master Plan for Riding Mountain National Park, Department of Indian and Northern Affairs, 1977, p. 37).

The 1977 Master Plan for the Park identified, as a minimum redevelopment requirement, the relocation of the existing boating activities from the main pier to the Boat Cove (Master Plan, 1977, p. 10).

Concepts for the development of a marina at the Cove presented prior to 1980 called for the construction of a mainly water-based facility. However, a concept presented in 1981 called for the development of a dry storage facility only. Because cost recovery of the project was not feasible under the proposal and since the proposed concept would encourage increased non-conforming use of the Park, SED suggested the project not be recommended.

In 1982, a design report outlining marina concepts was undertaken by a private consultant. However, due to data gaps and deficiencies, a preferred option has never been substantiated and presented to management for approval. A 1983 study report prepared by Riding Mountain National Park staff and the Prairie Region generated additional information on the project. The need for a dry and wet berth storage facility was identified. Conceptual alternatives of the proposed marina were also evaluated.

1.3 Management Objectives

The project will allow the development of a marina facility appropriate to the level and type of boater use of the park. This would serve to improve boat storage and boating use, as mentioned in the 1977 Park Master Plan (page 44).

1.4 User Requirements

An engineering report prepared in 1961 identified the need for the berthing of approximately 300 boats. In 1981 berthing facilities consisted of only 11 public stalls. This situation was clearly inadequate as some boat owners parked and stored their boats and trailers away from Clear Lake (sometimes on the nearby townsite streets). Others beached their boats along the lake shore, a situation which, in some cases, has caused erosion.

To remedy the situation, a project proposal was submitted in 1981. It called for the construction of a Marina in the Cove area located west of the Clear Lake Campground. The proposed complex would consist of:

(a) a pier or dredged lagoon to provide mooring facilities for Government craft, rental boats and an unknown proportion of public storage needs;

(b) dry land storage to accommodate the remainder of the public boats;

(c) suitably sized parking lot (150-200 spaces);

(d) three to four launch ramps;

(e) concession buildings plus facilities for gas and oil services; and

(f) washroom building.

The entire operation would be operated by a concessionnaire.,

Upon completion of the proposed facility, the existing pier in the main beach area would be used for purely recreational purposes.

A marina study was conducted in 1981-82 (LM Group) based on two past reports, one concerning boating use at Clear Lake (Johnston and Brewster, 1976), the other on boat types in Manitoba (Dunbar and Associates, 1979). However, the results of the study were found to be inaccurate. Because of this, Engineering and Architecture and the Socio-Economic unit offices, Prairie Region, together with Riding Mountain National Park, re-estimated the expected level of demand at the proposed marina. (Parks Canada, Clear Lake Marina, Riding Mountain National Park; Assessment and Evaluation of Proposed Concepts, March 1983.) According to their study the proposed facility should be built to satisfy the following functional requirements:

(a) 104 wet berths (2 covered) in the form of a floating dock;

(b) 119 dry berths;

(c) six to eight launch pads with launching docks;

(d) an approximately 13,000 m^2 parking lot containing the equivalent of 344 single stalls;

(e) a storage compound for 80 to 100 trailers, approximately 3,000 m^2 in size;

(f) an 80 m^2 concession building to provide a concessionaire office, a concession sales area and washroom facilities;

(g) a picnic area, as approved in Clear Lake Campground Development Plan; and

(h) other facilities and services such as a fish cleaning building, a fuel sales area, and utility services (lighting, public pay phones, garbage cans, sanitary sewage disposal to townsite system, water supply and underground electrical services). (Parks Canada, 1983, p. 15-16.)

1.5 Comments

Two studies have respectively examined boating use at Clear Lake and boat types in Manitoba. Although neither was demand oriented, both provided insight into boating market trends for Clear Lake. In fact, results from these studies were used to prepare boating use projections in 1981-82. These results again served in the preparation of facility design estimates in 1983.

The need for more precise socio-economic information relating to the marina development project has been recognized. A study, scheduled for the summer of 1984, should provide the required socio-economic data.

2.0 PROJECT CONCEPT

2.1 Option Selection

Two options concerning the concept of the proposed marina and four options relating to the management of the facility were considered. The concept options were:

(a) the breakwater marina concept; and

(b) the basin marina concept.

Under each concept option, location of the marina would be different.

A total of eight broad categories, containing a total of 77 components, were used to assess each option. Three categories were given high priority:

(a) environmental impact;

(b) layout/operational; and

(c) cost.

The other five assessment categories that were identified were:

(a) functional;

(b) construction phase;

(c) archaeology;

(d) aesthetics; and

(e) park use patterns.

The primary differentiating criteria between the two marina options were of an environmental impact and layout/operational nature. (Cost was estimated to be similar for both options.)

The basic concept would cause significantly higher environmental impact on park resources than the breakwater concept, primarily due to the destruction of the Boat Cove marsh habitat. However, the basin concept presented superior layout and operational design characteristics as it would offer easy land and water access to the marina. The basin concept would also exhibit some aesthetic advantages over the breakwater concept (Parks Canada, 1983, p. 32).

Either the basin or breakwater option could be favoured, depending on the values given to the environmental impact and the layout/operational categories. No final decision on the concept options has been provided.

The four marina management alternatives considered were:

(a) an owner operated facility, in which Parks Canada would own, operate and maintain the complex;

(b) an owner operated facility, in which a private entrepreneur would own, operate and maintain the complex;

(c) a concession, in which Parks Canada would supply marina facilities to a private entrepreneur who would then take on the risks of operating a marina business; and

(d) semi-privatization, in which Parks Canada would construct basic physical aspects of the marina and a private entrepreneur would own and maintain the facility's structures and equipment.

Two management options were rejected as infeasible. Capital and interest costs did not make private ownership an economically viable project. The concession operation option was rejected because it did not offer Parks Canada any opportunity for recovery of capital costs, an important aspect of the project.

The Parks Canada owned and operated facility and the semi-privatization options were therefore assessed.

The major advantage of the Parks Canada operated marina option was that two of the three biggest liabilities for a private entrepreneur (taxes and depreciation) would not apply. Interest costs (the third major liability) could also be avoided if Parks Canada paid cash for the equipment. This option would allow project capital costs to be recovered after 22 years while operation and maintenance costs would be recovered annually.

Under the semi-privatization option, Parks Canada would make capital and O&M cost savings, since the private entrepreneur involved would be responsible for the purchase, operation and maintenance of the equipment required at the marina. If this alternative was chosen, royalties paid to Parks Canada would also be smaller. These would serve to offset Parks Canada operation and maintenance expenditures and provide a small annual surplus that would serve to recover capital cost over approximately 93 years.

A final decision on the management option has not been taken.

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts

A comprehensive socio-economic screening of the marina options had not been undertaken as of 1983. However, preliminary indications at the time were that total benefits from the improved recreational facilities would significantly outweight direct and indirect costs incurred from construction and operation of the project. Recognizable benefits included: further development according to the RMNP Management Plan; improved marina facilities for public use and access; local and regional economic and employment effects; savings in time, travel distances and expenses for boaters; and improved safety and health effects. Identifiable socio-economic project costs were increased use and deterioration of the Boat Cove road during and after marina construction, possible losses in revenues and employment by townsite businessmen due to relocation of the existing main pier site, costs associated with congestion, noise, pollution, and loss of tourist traffic during the construction phase of the marina, and extra demand for existing water, waste disposal, fire fighting sewage and other services.

Other data requirements, such as the impact of marina development and operation on sand deposition, walleye spawning grounds, and lake currents were to be monitored as the project proceeded. (Parks Canada, 1983, p. 35.)

2.3 Visitor Market Forecast and User Projection

According to a 1976 Boating Use Study on Clear Lake a maximum of 262 boats on and about Clear Lake during any 2 hour sampling period required overnight accommodation. As Table 1 indicates, outboard motor crafts would comprise the largest single sector of boating demand for the marina. It was further estimated that wet berthing would be required for approximately 25 percent of boats accommodated overnight during the

TABLE 1: MAXIMUM NUMBER OF BOATS OBSERVED DURING A 2 HOUR PERIOD AND REQUIRING OVERNIGHT ACCOMMODATION*, CLEAR LAKE 1976

Boat Type	Quantity	%
Row	6	2.3
Canoe	111	42.4
Sail	24	9.2
Outboard	112	42.7
Other	9	3.4
TOTAL	262	100.0

Source: Parks Canada, Clear Lake Marina, Riding Mountain National Park; Assessment and Evaluation of Proposed Concept, 1983.

*It was estimated that 85% of observed boats would need overnight accommodation.

1976 season. Approximately 75 percent of boats did not require wet berthing facilities. Of these, 55 percent did require dry berths (Parks Canada, 1983, p. 9-10).

Based on a 1979 Study of Boat Ownership in Western Canada it was assumed that demand for boating facilities at Clear Lake would increase by an average annual rate of 1.25 percent between 1976 and 1981. From 1982 to 1985 the average annual increase would be 0.3 percent. There would then be a 0.14 percent average annual decrease in demand between 1986 and 1995. The growth rates assumed that Manitobans would represent approximately 88 percent of visitor boating use. Based on these assumptions, it was estimated that by 1995, the total boating facilities demand would be 278 berths. Table 2 summarizes the demand projections for wet and dry berthing.

TABLE 2: ESTIMATED BERTHING DEMAND 1976 TO 1995

Berthing Type	Year			
	1976	1981	1985	1995
Wet	70	74	76	75
Dry	111	119	120	119
TOTAL	181	193	196	194

Source: Parks Canada, 1983.

These estimates could be positively or negatively affected by the following variables:

(a) the popularity of outboard and powered craft, these types of boats representing 86 percent of launchings at Clear Lake in 1976;

(b) the origin of Clear Lake visitors (in 1976, 87.6% of boating facility users were Manitoban, 80% of which came from a 75 mile radius); and

(c) the socio-economic status of Clear Lake boating facility users and their sensitivity to economic conditions.

In addition to the berthing demand forecasts at the proposed marina, use estimates were also provided to determine the number of launching ramps required as well as the size of the parking lot and boat and trailer storage area.

Based on 1976 boating study data, it was estimated that the maximum number of boat launchings on Clear Lake over a two hour period was 67 boats (Parks Canada, 1983, page 12). Of this total, 25 boats (37.3%) were estimated to require the use of launching ramps. Assuming an average launching time of 25 minutes, total peak launching ramp requirements in 1976 would have been 6 ramps. By 1985, when boating facility demand is expected to peak, 8 ramps should be sufficient to meet peak launching requirements. Assuming a daily design capacity of 20 launches per ramp and a total of 6 to 8 ramps, total daily launching capacity would have ranged from 120 to 160 boats. Based on a 1976 maximum daily launching estimates of 336 at Clear Lake, and assuming 62.5 percent of these launchings did not need ramps, it was estimated that 126 ramp launchings would have taken place, well within the design capacity of the proposed marina (Parks Canada, 1983, p. 13).

Based on the above 1976 maximum of 336 daily launchings, it was estimated that 70 launchers would require parking for vehicles and trailers (i.e. double parking spaces). Assuming that marina berthing facilities would be fully utilized, peak wet berth parking requirements would be 78 vehicles, 52 percent of which would be used by transient boaters (i.e. 40 double parking spaces). The remaining 30 vehicle and trailer spaces would be used by transient boaters who would not use wet berthing facilities. It was further estimated that the remaining 38 wet berthing facility users would require single parking spaces (Parks Canada, 1983, p. 13).

Assuming that full capacity dry berth use would be 79 crafts and that peak use would account for 75 percent of this total, it was estimated that related parking requirements would total 60 spaces.

The maximum daily number of boat launches who do not use launching ramps or dry berthing facilities were estimated to be 98 users. Assuming that use would be spread over the day, it was estimated that 60 parking spaces would be adequate to handle this demand.

Parking space requirements for other types of marina users indicated that 46 additional single spaces would be needed. Adding up the space requirement totals for the various types of marina facility users, it was estimated that an equivalent of a 344 single space parking lot would be required (Table 3).

A storage compound area, proposed as part of the marina concept will allow those boat owners who prefer to do so, to store their crafts and trailers at the marina. The storage compound would also provide room for boat repairs, which would encourage the operator of the facility to offer various boating services.

Applying the ratio of berth capacity to the size of the storage area found at three marinas on Waskesiu Lake, Prince Albert National Park, it was estimated that a 78 berth facility (excluding rental boat and government berths) would require a storage compound for 80 to 100 trailers. The areal requirement was calculated at 3000 m^2 (Parks Canada, 1983, p. 15).

TABLE 3: ESTIMATED PARKING REQUIREMENTS AT THE PROPOSED CLEAR LAKE MARINA, RMNP (BASED ON MAXIMUM DAILY USE, 1976)

	Vehicle	Vehicle and Trailer*	Total (single spaces)
Wet Berth	38	40	118
Dry Berth	60	--	60
No Berth	60	30	120
Trailhead	8	--	8
Picnic Area	12	--	12
Staff	6	--	6
Rentals and Tour Boat	20	--	20
TOTAL	204	70	344

Source: Parks Canada, 1983.

* Assumed to require two vehicle spaces.

CASE STUDY - 2

CAPE BRETON HIGHLANDS NATIONAL PARK CLUBHOUSE

This case study is an example of how Consultants' Reports were used in adjusting an original project proposal to meet the financial restrictions proposed by management. These Reports analyzed park objectives, Parks Canada policies, project scale and location in relation to forecast demand, and capital and O&M costs related to cash flow and existing debt. The juxtaposition of their recommendations with the original proposal resulted in a more appropriately scaled facility.

1.0 PROJECT

On August 24, 1980 a fire at the Cape Breton Highlands Golf Course destroyed the proshop/clubhouse facility.

Since the fire, a renovated portable facility has been located temporarily on site. It serves to keep the course in operation, providing a minimum of washroom space plus an area for the proshop. Space is quite limited however, with no lounge or rest area. Equipment is stored offsite, making this arrangement inadequate as a permanent proshop/clubhouse facility.

The current proposal involves relocating and renovating an A-frame structure already in the park, to the site of the previous clubhouse. This facility will provide all the required features such as entrance lobby, pro shop, storage, washrooms, and parking, plus extras like showers, lockers, machine dispensed food service, lounge, and sun deck.

1.1 Forecast Cost - (1984 $) Class C Estimate

Total Cost	1984/85	1985/86
$431.0	20.0	411.0

1.2 Planning Phase - Concept

1.3 Management Objectives

The main objective of the clubhouse/proshop proposal is to replace the burned facility by the most efficient and effective method to meet the course's requirements. The underlying assumption is that the plans will be made in accordance with Cape Breton Highlands' overall park objectives.

1.4 User Requirements

There are three levels of functional and facility requirements for the operation of the CBH golf course. The functions are grouped at primary, secondary, and tertiary levels where the facilities are classified as essential, optional, or elaborate. These are given below:

Function Level	Functional Requirements	Classification	Facility Requirements
Primary	-fee collection -control start of players	ESSENTIAL	-proshop -parking -utilities -access road -washroom and change rooms
Secondary	-equipment sale and rental -repair service -pro lessons	OPTIONAL	-display space -counters -storage
Tertiary	-socializing -food sales	ELABORATE	-lounge area -food and beverage area -showers and lockers

The period of operation for the course is from the middle of May to the middle of October. Long term planning considerations (increase in cross-country skiing) indicate the building should have the capability for year-round use, which will increase the functional value of this asset.

Staffing requirements would increase slightly from the previous level. Additional maintenance efforts would be required with the addition of food machines and shower and locker room facilities.

2.0 PROJECT CONCEPT

2.1 Background Information

Cape Breton Highlands National Park has one of the oldest and best known golf courses in Nova Scotia. It is rated as one of the top 10 in Canada. The course is considered to be a public green fee or pay/play facility.

There are 65 members in the CBH club, each paying a $10.00 membership fee. This club was created to develop interest and responsibility in the course's operations and the playing practices of its patrons. Membership provides tournament participants attainment of a handicap rating and a limited social life. The members generally play "out of the trunk" of their car, arriving dressed and returning home to change.

Previously, the course was managed by a local pro who received modest returns from the course and additional income from a nearby ski hill. He paid Parks Canada 5% of gross sales as payment for the leased club.

Attempts have been made to improve the financial situation of the golf course. The introduction of twilight fees and seasonal rates, combined with a 21.13% increase in daily usage, created a slight increase in revenues from 1979-1981. The fees for the course are comparable with other pay/play facilities in Canada and the north-eastern United States, but are based on a relatively high subsidy per round played. This is due to the large operating and maintenance expense for this course, which is currently in a deficit position. Above average salary and wage costs also contribute to the course's unfavourable financial situation.

2.2 Option Analysis

A proposal was submitted to replace the proshop/clubhouse outlining the scale and location as decided by Cape Breton Highlands National Park. The major option is whether or not to accept this proposal.

2.2.1 Option A -Jan. 1981 CBH clubhouse/proshop proposal
-$541.0 ($ 1981, Class C Estimate)

This option involves constructing a two-storey building adjacent to the present #5 tee and re-sequencing the golf course. This plan includes the following:

Building Details
- -entrance lobby
- -proshop
- -rental and sales space
- -pro's office
- -manager's office
- -food and bar service area
  - - dry lounge
  - - wet lounge
- -washrooms/locker rooms
- -storage
- -extra space (possible future power cart use)

Site Details
- -parking lot for 80 cars and 5 trailers
- -practice green
- -buffer zone of trees to block off cemetry
- -through access to river for boat users
- -cleared land for view
- -landscaping
- -change sequence of the course
- -access road

Advantages

The advantages of developing Option A at Cape Breton Highlands golf course are given below:

(a) the course is upgraded; includes a bar, showers, improved view; eliminates 3 mile walk to hole #9 (new location of hole #9 is next to clubhouse);

(b) these added services could help to attract more users;

(c) with hole #9 near the clubhouse, players are discouraged from "cutting in", a previous control problem;

(d) there is the option of playing 9 or 18 holes;

(e) when the #1 tee is crowded players can be started at the #10 tee.

(f) potential to increase senior participation by decreasing physical demands of the course through eliminating the 3 mile walk from #9 hole to the Clubhouse, and allowing for future power cart use;

(g) the building costs $28,000 less at the new site than at the original clubhouse location;

(h) there are marketing implications for the increased view of the bay from the course and of the clubhouse from the Cabot Trail;

(i) relocating the clubhouse to this proposed site reduces traffic at the Keltic Road intersection;

(j) previous canteen at hole #10 will no longer be necessary with closely located food and bar services at the clubhouse; and,

(k) future power cart adaptations are less costly on new sequence of the course than the original arrangement.

Disadvantages

The disadvantages for Option A are:

(a) there have been two proposals for changing the sequence of the course in the past 20 years. On both occasions they were rejected. The project was too costly, as the course was considered adequate;

(b) there are several facilities proposed (entrance lobby, showers) that are not considered essential to golf courses classed as public green fee or pay/play facilities;

(c) previously the manager acted as the course pro. This circumstance made a pro office and a manager's office excessive, especially since a large portion of the pro's time is spent on the course;

(d) costs exceed $500,000 in which case the project will require a separate Treasury Board submission;

(e) there is reduced access for the lodge patrons to the new clubhouse site;

(f) operating and maintenance costs increase, adding to the deficit O&M account;

(g) there are elements of this proposal which are not part of Parks Canada's policy (clearing trees to increase golfers' view of the bay);

(h) increased debt that would result from the construction, along with unencouraging user forecasts, would decrease the potential for privatization of the course.

This option was rejected since construction and operating costs were considered excessive. As well, the proposed components were not in accordance with park objectives or considered course necessities.

Following a Headquarters review of this proposal two consultants were retained for further study on the CBH golf course. They were to make recommendations concerning the scale and location of the facility. A description and major findings of the reports by W.M. Baker and J. Leicester are given in the following section.

2.2.2 Summary of the consultant's reports

Report by W.M. Baker

The report entitled "Evaluation of Alternative Locations and Type and Scale of Golf Clubhouse Development for Cape Breton Highlands National Park" was completed in 1981. This report emphasized market and revenue generation considerations, as well as the environmental and social aspects involved.

The following are the highlights of W.M. Baker's document:

1) the golf course is among the premium facilities in Canada and probably on the continent in terms of challenge and aesthetic impact;

2) the current market situation is weak;

3) golf is not a major activity for the park visitors;

4) the building structure must meet the national park system standards as well as be functionally adjusted;

5) a clubhouse designed to meet the needs of a low volume use publc pay/play course is recommended. Suggestions are made for a modest one storey building, in the $400,000 range;

6) the functional areas that should be provided

are:

a) pro shop
   - collect fees and control course play
   - counter sales
   - display space
   - repair shop (probably not needed)
   - rental club storage space,

b) rental cart storate space - can be in wing of building,

c) lounge area - tables, chairs,

d) food and drink area - automatic machines, beer could be sold if regulations can be met without an elaborate costly investment.

Showers are costly in terms of their space requirement and maintenance, and are not necessary for the volume use patterns at CBH;

Lockers are considered unnecessary for public pay/play facilities, as well as restaurants and other amenity features characteristic of private courses;

7) the original location of the clubhouse is preferred for the new development. The major reason for this is the high development costs associated with the new location;

8) prospects for privatization of the entire golf course operation, including the course, the set of machinery and maintenance sheds, and the clubhouse appear to be poor to virtually non-existent. If it does occur, the risks of Parks Canada having to repossess it are very high;

9) responsibility for course operation by the Province of Nova Scotia, combining the ski facilities, Keltic Lodge, and golf course is one exception to the above-mentioned chances for privatization. There may be succeses using this concept of a group of destination area facilities;

10) increasing the level of amenity facilities will not markedly improve prospects for privatization.

Report by J. Leicester

This report deals with first, the location of the proposed proshop/clubhouse and secondly, its user services to determine the size of the facility. In contrast to Baker's market/revenue generation considerations, this report concentrates on the potential physical plant with focus on the user.

The major issues discussed in Leicester's report are below:

1) relocation of the proshop/clubhouse to east of #5 tee is suggested. The comparison of this site to the original location is done on the basis of:
   - the effect on course play and integrity,
   - services and conveniences for patrons,
   - course management and supervision,
   - proshop/clubhouse visibility,
   - effect on traffic,
   - possible future privitization,
   - estimated costs;

   The new location scored higher for all factors except for: where there were equal effects on traffic at both sites, and where the original location proved more economical;

2) studies involving climatological data found that weather did not have a significant effect on participation;

3) the provision of services for the new facility would include:
   - space for quick lunches and a bar service,
   - minimal locker provisions in the washrooms,
   - no space for power carts, due to cost and their environmetnal impact,
   - entrance lobby,
   - proshop,
   - manager's office,
   - storage;

4) suggested space requirement for the clubhouse is 250 sq. metres with a 57 sq. metre deck;

5) a one-level structure is suggested;

6) the proshop/clubhouse facility recommendation is estimated at $414,400 on the original clubhouse site and $499,400 at the site east of #5 tee;

7) the facility would be outlined as a one-man operation (excluding busy weekend periods);

8) inclusion of other rentals for increasing the number of recreational activities and generating revenue are suggested, i.e. lawn bowling, horse shoe equipment;

9) various marketing strategies are suggested, for example, using a course theme and/or increasing public relations.

By combining the findings of these 2 reports, and reviews done by other involved individuals, a second proposal was designed.

2.2.3 Option B -Oct. 1981 CBH Clubhouse/proshop proposal
-$496.5 (1981 $, Class C Estimate)

This option involves the site adjacent to the present #5 tee. The building is one-storey, reducing its size from Option A by 97.6 m^2. To reduce costs from Option A, locally available day labour would be used, the parking lot will not be paved, and design will be done in-house.

The building and site details are the same as Option A except the pro's office, and extra space for power carts have been removed. The amount of landscaping has been reduced.

Advantages

The advantages are the same for Option B as given for Option A, with the addition of the following:

a) building costs are reduced by using a one-storey structure; and,

b) the planned managerial and administrative space requirements are reduced.

Disadvantages

The disadvantages for Option B are the same as Option A's, except excessive office space is no longer a problem. The estimated costs are $496,500 and require a separate Treasury Board submission which at this level has been delegated to headquarters. Where privatization is concerned, Baker (1981) makes the following statement:

> "The focus should be upon functional areas required to meet the athletic dimensions with social amenities decidedly a secondary support consideration. Failure to recognize this will lead to a deficit operational situation, particularly with respect to maintenance and seriously jeopardize any future attempts to privatize the course and/or clubhouse."

The regional mandate direction was that this project not exceed $500,000. The estimated costs could not be finalized at $496,500 guaranteeing the project cost would be less than $500,000 and hence was contrary to this mandate. As well, the changes proposed were not considered "essential", nor in accordance with park objectives.

Further review resulted in a third proposal, discussed in the following section.

2.2.4 Option C -Jan. 1984 CBH clubhouse/proshop proposal
-$411.0 (1984 $, Class C Estimate)

This proposal involves relocating and renovating an unused A-frame structure to the original proshop site from another area of the park. This plan includes the following:

Building Details	Site Details
-entrance lobby	-parking lot for 95 cars and 5 trailer units
-pro shop	
-machine dispensed food service	
-lounge	
-washrooms and lockers	
-storage space	
-deck	

Advantages

Option C has the following advantages:

(a) costs are below $500,000;

(b) using A-frame structure costs much less than constructing a new building (Table 1- cost comparisons);

(c) leaving the golf course sequence unchanged respects the original design integrity of the course;

(d) Meets basic project objectives and reflects marks Canada policy;

(e) it is desirable to remove A-frame structure from its present location;

(f) it is feasible to winterize the building, should the number of cross country skiers increase making year-round operation desirable; and,

(g) operating and maintenance costs will not increase excessively.

Disadvantages

The disadvantages for Option C are:

(a) potential to attract more users reduced by fewer services provided in Options A and B; and,

(b) the course cannot control "cut-in" and waiting problems.

This proposal is the most financially feasible at present, and includes the important function and facility requirements needed to replace those lost in the August 1980 fire. It has therefore been accepted.

TABLE 1: COST COMPARISONS BETWEEN CONSTRUCTION OF A NEW BUILDING AND THE RELOCATION/RENOVATION OF THE EXISTING A-FRAME STRUCTURE (1983 $)

Building Feature	A-Frame	New Building
Sewer and water connection to main	7.0	7.0
Electrical main (underground)	2.5	2.5
Parking area (paved)	187.0	187.0
Landscaping of parking area	15.0	15.0
Landscaping of building area	15.0	15.0
Construction of building 259 m^2 @ $1000/metre	--	285.0
Relocating A-frame	20.0	--
Renovating A-frame	150.0	--
Winterizing	15.0	15.0
TOTAL	411.5	526.5

Source: Reference memo Way/Reynolds, File #2520-C2, December 2, 1983.

2.3 Preliminary Screening of Potential Socio-Economic Impacts Unavailable

2.4 Visitor Market Forecasts

At present, CBH golf course has a current user market between 29 and 133 golfers per day, with the seasonal daily average being 81. Usage has not exceeded 133 golfers per day more than 30% of the season. There were only 6 occasions in 1979 and 1980 when more than 200 golfers were on the course in one particular day. These few times parellel closely with tournament dates. The average weekend use is 119 per day.

The busiest hours for the course are between 9 a.m. and 11 a.m. On busy days participants tee-off approximately every 8 minutes. The game takes 3½ hours for those that are familiar with the course, and up to 5½ hours for those who are not. Eighty-one percent of the rounds are in a 92 day period (July, August, September). The golf course can accommodate up to 19,500 rounds during this time, but have averaged only 9750 rounds played.

There is no solid evidence of the origin of players but a general indication is as follows. On busy days, 50 of 200 rounds (25%) are played by local residents. The remaining 75% are tourists coming from surrounding hotels, motels, campgrounds, lodges, and cottages. An estimate of 60-65% of those players are Cape Breton Island residents. Use on the weekends is predominantly by local and regional residents. Since this is a consistent group using the area's accommodations, the participation in golf is decreasing as the average age of the clientele increases. There have been no new recruits to this market.

There are few women golfers among local participants. Only 2 out of 65 members are female.

According to reports by Baker (1981), Leicester (1981), plus other observations, poor prospects for a steady build-up of participants has been noted. Increased usage under present passive marketing and promotion has been discouraging. There are some expected increases in the spring and fall, but July and August are considered "soft" with substantial declines. If there is any growth it will be at a slow rate. The increased revenues noted earlier must be kept in perspective with these less than encouraging predictions of usage.

Leicester (1981) gives the following visitor estimates:

(a) average participation for weekend day is 140;

(b) course would be played for 2½-5 hours of the day;

(c) average number teeing off at any one time is 3;

(d) tee off intervals are on the average 10 minutes;

(e) at the back 9 holes, there would be 5 minute tee off intervals;

(f) half of all players would play 10 holes; and

(g) two thirds would stop for refreshments following play.

There is a potential for introducing package tours to increase the number of visitors, since there are other available facilities in the area. This would mostly increase the numbers in the spring and fall.

2.5 Life Cycle Cost Analysis Unavailable

2.6 Estimates of Economic Benefits Unavailable

2.7 Comments

Financial restrictions proposed by management dictated that the CBH golf course proposals be less than $500,000 which was met by Option C. The other options were rejected.

Proposals A and B, which included redesigning the golf course, were cases of taking advantage of the situation, and current Parks Canada policy does not include constructing golf courses.

The issue of privatization mentioned in the options was used as a means to convince others to approve a larger scale project than user demand warranted. The existing debt situation was not discussed, nor was the situation of higher O&M costs for a larger facility analyzed against revenues. The privatization issue only complicated the options analysis.

Other studies could have provided important information to establish the project's feasibility. A life cycle cost analysis could give the future long term cost picture, defining the project's feasibility over time. Preliminary screening of socio-economic impacts could give an understanding of the effects of each proposal. An estimation of economic benefits may have been able to help justify any extra expenditures felt necessary at Cape Breton Highlands.

CASE STUDY - 3

CALLANDERS BEACH DAY USE AREA:

KOUCHIBOUGUAC NATIONAL PARK

This case study is an example of how public consultation combined with a visitor use survey yielded both useful ideas and an excellent statistical base resulting in a well formulated and extensively substantiated project effort.

1.0 PROJECT

Development of Callanders Beach in Kouchibouguac National Park into a defined day use area is proposed. The area will be developed into an Active and a Passive Area and will include: a defined parking area with an overflow capability, two combination kitchen shelter/toilet buildings, picnicking area, recreational facilities comprised of five central fire rings for clam bakes, a children's playground, an orientation map and information bulletin board.

As a result of 1981 public consultation meetings, the development will also include: a field in each area for general romping and group play activities (frizbee, catch, baseball, volleyball), two horseshoe pitches and a courtesy dock. Swimming at the beach will be unsupervised. Abandoned roadways, temporary parking, survey lines, etc., will be rehabilitated, and the foreshore will be stabilized to the existing "soft" area so the lawn meets the water at high tide.

1.1 Forecast Cost (1982 $) Class C Estimate

Total	1983/84	84/85	85/86	86/87
2917.8	119.5	---	1478.0	1320.3

1.2 Planning Phase - Definition

1.3 Management Objectives

The proposed development will improve the safety environment for those currently using Callanders Beach thereby enhancing visitor experience. Secondly, it will relieve the present over-crowding at Kellys Beach by providing a similar alternative as was recommended in the Development Concept Summary for Kouchibouguac National Park, thus decreasing the visitor use area density which was contributing to environmental degradation at Kellys Beach.

1.4 User Requirements

1.4.1 Parking

The user capacity of Callanders Beach was determined in 1976 by Reinhart Petersmann to be

1383 persons. This represents a maximum requirement for 395 vehicular parking spaces (1383÷3.5 persons/vehicle). The average number of spaces expected to be used is 260 (average summer weekend day of 910 persons - 3.5). Therefore, 260 spaces should be provided, with an overflow allowance for 135 vehicles (260 + 135 = 395).

1.4.2 Kitchen shelters/toilet buildings

Tables which are permanently attached having replaceable tops and seats will be provided in the shelters. There will be a shelter in both the Active Area and the Passive Area. Stoves will be built in each shelter which are suitable for both summer cooking and winter heating. A wood storage area, counter space and garbage recepticles will also be provided in each shelter. All facilities will be accessible to handicapped persons.

In accordance with Parks Canada design manuals appropriate toilet, shower and change facilities will be provided.

1.4.3 Picnic and recreational facilities

Picnic area facilities consisting of regular size picnic tables, tables suitable for wheelchair access, garbage cans (1 per 5 tables), charcoal disposal cans (1 per 10 tables), ground mounted fireplaces (1 per 3 tables), and one wood box per area.

Recreational facilities will comprise five central fire rings designed for clam bakes with low circular seating; a children's playground which will be located in the Active Area; a central orientation map and an information bulletin board in each area. As a result of the Public Consultation Program two facilities were added to each area: a field suitable for general romping and group play (frizbee, catch, baseball, volleyball), and two horseshoe pits. As well, a courtesy dock for launching and retrieving canoes and small boats will be situated off the Passive Area parking lot.

1.4.4 Other

Access roads, sewage disposal, signs, and electric power supply will be part of the design components as stipulated in Parks Canada design manuals.

Abandoned roadways, temporary parking areas, survey lines, etc., will be rehabilitated in such a manner as to facilitate maintenance as well as enhancing the area. Foreshore stabilization will be done to the existing "soft" area so the lawn meets the water at high tide.

1.4.5 Staff requirements

The staff requirements for season opening and closing as well as on-going maintenance is 0.2 person-years.

2.0 PROJECT CONCEPT

An extensive Visitor Use Survey was conducted in 1981. The information gained from this effort, combined with a Public Participation meeting in November 1981 and Senior Management review in 1982 resulted in a well formulated and extensively substantiated project effort.

2.1 Option Selection

Three alternatives were considered: no development - status quo situation; partial development; or development of other area(s).

2.1.1 No development

Since the management concerns at Callanders Beach relate to public safety, the overloading at Kellys Beach and environmental degradation, the consequence of doing nothing is considered unacceptable. The uncontrolled free wheeling of vehicles over the field will continue to threaten public safety, especially small children. Kellys Beach is currently experiencing heavy overloading on weekends which will continue in the absence of a suitable alternative contributing to continued environmental degradation at Kellys Beach.

2.1.2 Partial development

This project is already a scaled down version of Callanders Beach development because of environmental concerns and the realities of financial restraint.

2.1.4 Develop other area(s)

No other area is suitable, or can afford the opportunities and traditional recreational use that Callanders Beach has to offer.

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts   Unavailable

2.3 Visitor Market Forecast

Kouchibouguac National Park has vehicular entrance data from 1974 (Table 1). A detailed visitor use survey uas undertaken in 1981 and a combination of these two sources indicates the following:

(a) the percentage annual visitation growth rate from 1974-1982 = 8.2%;

(b) average party size of all visitors = 3.0 persons; and,

(c) average length of stay at Kellys Beach = 2.2 hours and at Callanders Breach = 1.6 hours.

Callanders Beach is a popular tourist area even with its extremely limited development. The 1981 study revealed that Callanders Beach has 27% of all beach users. It is realistically expected that this development of the day use area will result in an user increase of 40-50%. It is also expected that the annual growth rate from 1983-1990 will be 5% which represents a realistic levelling off from the rapid growth rate of the first few years. Specifically, based on 70% of the average summer weekend day use, Callanders Beach could average 910 persons in 1990.

Although Callanders Beach had an average visitor length of stay of 1.6 hours, development of the day use area is expected to increase that to a period comparable to that at Kellys Beach - 2.2 hours.

Since Callanders Beach will be developed into two areas - it is expected that 70 percent of the visitors will utilize the active area, with the remaining 30 percent using the passive recreational area.

TABLE 1

TREND - PEAK SEASON VEHICLES ENTERING AT MAIN GATE - KOUCHIBOUGUAC NATIONAL PARK

(July and August)

PEAK SEASON					PEAK SEASON - WEEKENDS			
Year	Total +Vehicles Entering	Park User +Related Vehicles (95% of total)	Trend +Projected Numbers	Percent +Change	Total Vehicles	% of +Total	Trend +Projected Numbers	Percent +Change
1974	21,318	20,252	19,170	---	7,703	36	7,791	---
1975	20,973	19,924	21,335	+11.3	9,605	45.8	8,570	+10.0
1976	23,916	22,720	23,500	+10.2	7,995	33.4	9,348	+ 9.1
1977	27,608	26,228	25,665	+ 9.2	9,630	34.9	10,126	+ 8.3
1978	32,054	30,451	27,830	+ 8.4	12,598	39.3	10,904	+ 7.7
1979	34,581	32,852	29,995	+ 7.8	11,874	34.3	11,683	+ 7.1
1980	27,467	26,094	32,160	+ 7.2	10,817	39.4	12,461	+ 6.7
1981	32,100	30,495	34,325	+ 6.7	13,236	41.2	13,239	+ 6.2
1982	43,638	41,456	36,490	+ 6.3	14,682	33.6	14,018	+ 5.9
1983			38,655	+ 5.9			14,796	+ 5.6
1984			40,820	+ 5.6			15,574	+ 5.2
1985			42,986	+ 5.3			16,352	+ 5.0
1986			45,150	+ 5.0			17,131	+ 4.8
1987			47,315	+ 4.8			17,909	+ 4.5
1988			49,480	+ 4.6			18,687	+ 4.3
1989			51,645	+ 4.4			19,466	+ 4.2
1990			53,810	+ 4.2			20,244	+ 4.0
Slope = 2,165.01			Avg. % (1974-1900)	+ 6.7			Avg. % (1974-1990)	+ 6.2
			Avg. % (1974-1982)	+ 8.4			Avg. % (1974-1982)	+ 7.6
			Avg. % (1983-1900)	+ 5.0			Avg. % (1982-1990)	+ 4.7

2.4 Life Cycle Cost Analysis

Technically a life cycle cost analysis was not undertaken for the entire project. Costs were enumerated and included an overhead and profit factor of 25%, a supervision factor of 4%, a design factor of 9%, a contingency factor of 5%, and an average risk factor of 37%.

A life cycle cost comparison to identify long term economies from either asphalting or chip sealing the surface of travel ways was undertaken by regional E&A. It was found that asphalt paving was more economical over an assumed 15 year life cycle period even though it was initially 50% more expensive than chip seal.

2.5 Estimation of Economic Benefits

Unavailable

2.6 Comments

The original proposal for development of the Callanders Beach day use area was made in 1978. When this project was reviewed by Headquarters questions arose concerning the scope and size of the proposed developments and the Region was asked to provide relevant information and visitor use data and projections to substantiate the proposal. In response to these questions the Region, in 1981 conducted a user survey which was subsequently useful in developing visitor forecasts. Forecasts on the parking demand at Callanders Beach were further revised by the Region in 1983. The level of detail on visitor use at both Kellys Beach and Callanders Beach provided an excellent statistical base for planning the day use area as well as writing the PIPS documentation. A Headquarters review of the PIPS submission resulted in two very useful recommendations, namely:

1) during the years of project initiation and development information can be obtained at both Kelly's and Callanders Beach which will confirm or allow appropriate modifications in scale and nature of facilities to be introduced as the project "evolves". Specifically, information on the number of vehicles at both beaches for peak days and for some typical non-peak days during 1983 and subsequent periods during the development of this project;

2) the project should be redefined in such a way that it can be developed incrementally and adapted to actual use levels as these evolve so user demands are met in a cost-effective way.

The PIP submission reported that the development at Callanders Beach, as anticipated, will increase visitation at the Beach. This development will enhance visitation and subsequently produce a positive impact by providing an improved attraction while simultaneously alleviating current visitor crowding elsewhere in the Park.

CASE STUDY - 4

TIMBER SWING BRIDGE REPLACEMENT RIDEAU CANAL

This case study is an example of how socio-economic analysis can be utilized in determining the appropriate capacity needed for the replacement of historic bridges which service not only site visitors, but also the area residents necessitating maintenance of safety levels.

1.0 PROJECT

Four of the five remaining King Post timber swing bridges on the Rideau Canal constitute important crossings of the Rideau Canal and are an integral part of local road systems.

Owing to normal usage, as well as the passage of vehicles in violation of the posted gross weight bridge limit, these four bridges must be replaced. If they are not rebuilt and/or kept in safe condition, vehicular traffic would be stopped resulting in considerable political and inter-governmental involvement. An investigation into area traffic patterns and socio-economic implications was undertaken. Three lockstation timber swing bridges are analyzed to demonstrate the results of this analysis.

1.1 Forecast Cost - (1983 $) Class B Estimates

	1983/84	1984/85	1985/86
Kilmarnock		131.2	
Lower Brewer's	137.5		
Nicholsons			125.0

1.2 Planning Phase - Definition

1.3 Management Objectives

The objective at Kilmarnock, Lower Brewer's and Nicholsons lockstations is to replace the entire timber structure in a manner consistent with public safety and the Preservation Guidelines which recognize them as major engineering structures.

1.4 User Requirements

Each bridge must be rebuilt to a safety standard which reflects area usage, recognizing that the existing bridge load limits are below what is normally permitted on Ontario highways. Special consideration must be given to emergency vehicles (ambulances, fire trucks).

1.5 Comments

Parks Canada possesses many assets, like roads and bridges which it must maintain both because they provide access to our parks and sites for the visitors, and because they are part of the local infrastructure.

The necessity of rebuilding the bridges at the lockstations of Lower Brewer's, Burritt's Rapids, Jones Falls, Kilmarnock and Nicholsons prompted two separate investigations. First, consultation with the Rideau Canal historian resulted in the Replacement Policy for Timber Swing Brigdes on the Rideau Canal. The second project was a study the types of vehicles using each bridge and included an affected area definition, a site investigation, discussions with local school boards and emergency services organizations; and consideration of social cost.

2.0 PROJECT CONCEPT

The framework for replacing timber swing bridges was defined in an October 1983 policy. Based on an investigation of "existing policies regarding heritage preservation and public safety, the guidelines to be adhered to when replacing wooden swing bridges are:

(a) the historic appearance, evolutionary nature, and existing mode of operation will be retained;

(b) the load limit on the bridges should only be increased when there is a demonstrated need for reasons of public safety and to accommodate local traffic;

(c) the use of different types of wood to increase the weight capacity of a bridge is acceptable as long as the design of the bridge is not altered;

(d) enforcement of the load limit should be carried out by Canal staff; and

(e) where feasible a bridge should enhance, to the maximum extent possible, the interpretive resources of a site."

2.1 Option Selection

The existing bridge capacity at each lockstation (Kilmarnock, Lower Brewer's, and Nicholsons) is 5 tons. The option selection relates to deciding between leaving the gross weight limit at 5 tons or to increase capacity to 10 tonnes[1] (the alternative of closing the bridges is not considered to be a viable option). An investigation of bridge usage was undertaken by the Headquarters traffic engineer and the Ontario Region socio-economic analyst responsible for the Rideau Canal.

2.1.1 Kilmarnock

A 1983 traffic observational study by the Rideau Canal (canal workcrew simply placed a checkmark on a master sheet located at the lock) indicated bridge use by local cars, ½ ton trucks, ambulance, dump trucks (approximately 3 tons), farm trucks pulling loaded hay wagons and an oil truck. There were no school buses and no fire trucks. The posted limit on this bridge is 5 tons. Fully loaded fuel trucks weigh approximately 15 tons.

The oil companies involved have offices in Smiths Falls and were visited by the research team who spoke to the area managers. Both managers stated that the drivers had been instructed not to use the Kilmarnock bridge and the delivery routes were designed in such a way as to avoid crossing at Kilmarnock.

A visit was made to the Smiths Falls fire station. The Chief informed the research team where the area fire stations were and said he has never known of an occasion when fire trucks have crossed at Kilmarnock as both sides of the Canal have fire fighting equipment. As well, in this area the Canal is the municipal boundary eliminating the need for municipal vehicles to cross the Kilmarnock bridge.

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[1] Bridges currently operating are classified in imperial tons which reflects the standard when they were built. Newly built bridges, or recommendations for new bridges will have their capacity designated in metric tons, i.e. tonnes. An imperial ton = 2000 pounds; a metric ton = 2200 pounds.

The research team recommended that the Kilmarnock bridge gross weight limit remain at 5 tons. The two oil companies in Smiths Falls were informed of this decision.

2.1.2 Lower Brewer's

The research team discovered that the only heavy vehicle to cross at Lower Brewer's was a school bus. The Frontenac County School Board utilizes the present route because it is the most cost effective, as well as being convenient for both the students and the bus drivers.

The recommendation for the Lower Brewer's bridge was for accommodation of the school bus. The bridge will have a gross weight limit of 10 tonnes.

2.1.3 Nicholsons

A site visit to the Nicholsons lockstation revealed not only the 5 ton Parks Canada bridge but also an adjacent 5 ton municipal bridge.

A 1983 traffic observation study by Nicholsons lockstation staff indicated use by: cars, empty dump trucks, ambulance, farm trucks pulling hay wagons, school buses, and an occasional oil truck, and no fire trucks. At Nicholsons, the Canal is the Municipal line with each municipality having its own fire fighting service.

The Lanark County road engineer was contacted. He told the research team of the November 1983 opening of a new bridge at Burritt's Rapids (two miles away) with full highway loading capacity. Further, he said that Lanark County will not be increasing the capacity of the Nicholsons bridge. In fact, when safety becomes an issue they may close the bridge to vehicular traffic.

The research team, on the basis of their investigation recommended no action be taken at the present time at Nicholsons until it is known whether or not Lanark County will close their bridge to vehicular traffic, or will maintain their bridge to the posted 5 ton limit.

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts

The research team surveyed the area surrounding each lockstation bridge to determine if any imposition would occur if the proposed new bridges had 5 ton gross weight limits. Of particular concern, was use by emergency vehicles (fire trucks - ambulances weigh only slightly more than station wagons) and school buses. As the Lower Brewer's bridge was the only one utilized by school buses, its weight capacity was recommended to be upgraded to 10 tonnes with the constraint that the historical, visual appearance of the bridge be maintained (the engineers have assured us that this is possible).

No adverse impacts are expected as a result of rebuilding the Kilmarnock wooden swing bridge to a 5 ton gross weight limit.

The situation at Nicholsons is unclear for the following reasons:

(a) if the Municipal bridge is maintained at 5 tons it would effectively limit the Parks Canada bridge to 5 tons even if the Nicholsons bridge was rebuilt to 10 tonnes to accommodate the school bus. This would represent an economic inefficiency due to providing excess capacity;

(b) if the Municipal bridge is closed to vehicular traffic when it becomes unsafe, it will limit the use of the Parks Canada bridge regardless of whether it is 5 tons or 10 tonnes. In this case it is economically inefficient to rebuild it to either 5 tons or 10 tonnes.

2.3 Visitor Market Forecast

It is inappropriate in this case to do a visitor market forecast because the bridges are part of the infrastructure, and function as an integral component of the municipal road network.

2.4 Life Cycle Cost Analysis

A replacement wooden swing bridge using B.C. fir (the original material was oak but is increasingly difficult to find) and having a 5 ton capacity costs approximately $125,000 and has a lifespan of 15 years. Violations of the gross weight limit shorten the lifespan in relation to the degree of abuse. (Material costs equal $40,000.)

A replacement wooden swing bridge having a 10 tonne capacity would utilize a hardwood capable of withstanding increased loads in those sections of the bridge which are subject to the greatest stress. The material would be cut to the same size and these structural members would be hidden from view. Increased cost is $10,000 for material. Expected life span is approximately 20-25 years.

2.5 Estimation of Economic Benefits

There will be no change in economic benefits to the area as this represents a replacement of existing bridges. Enforcing the historic 5 ton limit when rebuilding the bridges would represent a social cost to the Lower Brewer's lockstation area which was not quantified.

2.6 Comments

Socio-economic analysis is a valuable tool for assessing the capacity level required from either regular maintenance or reconstruction, so that adequate levels of safety are maintained, and expenditures are realistic since over-capacity will be avoided. Front-end investigation provided usable data for E&A bridge designers.

PART 1 - BENEFIT-COST ANALYSIS

A. Introduction

Benefit-cost analysis is a technique which may be used by managers in deciding on the most efficient allocation of funds among competing projects. The analysis must demonstrate that the resources required from the private sector can be more efficiently used in the government project in question at the prices and discount rates prevailing in the market place. A project is considered to involve an efficient allocation of government resources (resulting in a net gain to the economy) and should be undertaken, if its allocative benefits exceeds its allocative costs (see Treasury Board Guide, page 9).

Benefits consist of the value of additional goods and services produced, increased productivity, time or cost savings. Opportunities to increase production and consumption can be estimated either directly from market prices or indirectly from the users' willingness to pay or demand curves.

Costs consist of the value of consumption and investment opportunities foregone as the result of higher taxes or government spending. Opportunity costs include either the cost of borrowing to the public sector or the rate of return from the resources in their best alternative use in the private sector. The technique requires the use of marginal (incremental) benefits and marginal costs as the use of average benefits and costs exaggerates the benefits.

A manager can reach a decision on the relative merits of a project on the basis of their investment criteria, namely, the net present value, the benefit-cost ratio, and the internal rate of return. Of the potential investment criteria, the net present value, a positive return in excess of the discount rate, is the preferred investment criteria where there are budgetary constraints and there are mutually exclusive choices to be made. The benefit-cost ratio, which must be greater than one to be desirable, is a less desirable investment criteria, but is sometimes used when there are a number of projects to fund from a fixed budget. However, the benefit-cost ratio is indifferent to the scale or level of investment required. Also, problems of comparability arise where analysts adopt different stances towards unfavourable effects (eg. disbenefits vs. costs). The internal rate of return, the effective yield or interest on an investment, is less frequently used. It may be difficult to calculate and, there may be more than one rate of return depending on the timing of expenditures and cash flows.

A project may be considered worthwhile if the net benefits it generates are positive: that is to say the project produces more goods and services than it uses. Because of the "time value" of money, all costs and benefits must be dated and appropriately discounted to their present worth. The discount rate is the rate at which present and future economic benefits and costs are traded off over the period-in-use of the project. The current discount rate can be obtained from Program, Planning and Analysis Directorate (5% in December 1983; was 10% in 1981) and represents the average rate of return before taxes and after inflation. In periods of uncertainty a sensitivity analysis is usually performed by chossing one discount rate less than and greater than the current rate (if the current rate was set at 10% the sensitivity analysis would use 5%, 10% 15%; if 5% then 4%, 5%, 8%). (See Treasury Board Guide, page 26.) The discount rate is a measure of the consumption and investment opportunities that would have to be foregone in the private sector as the result of higher taxes or government spending. As well, the discount rate is a measure of the real interest rate at which the government would have to borrow money to pay for the project. Alternatively, it is a way of determining the actual amount of money the government would currently have to have on hand to pay for all present and future costs of the project. Generally, all costs and benefits are stated in constant dollars, thus alleviating the necessity of anticipating the future inflation rate.

Sensitivity analysis is used to identify and quantify the effect that changes in basic assumptions or the values of key variables will have on the outcome of a benefit cost analysis. These assumptions or variables include:

(a) the discount rate;
(b) the useful life of the project;
(c) the relative movement of prices (eg. energy); and
(d) the occupancy rate.

Different values are used to construct alternative scenarios of potential outcomes (eg. most probable, least favourable) to identify changes that are likely to alter any of the recommendations based on the benefit-cost analysis. The limitation of sensitivity analysis is that it does not consider the impact of a combination of changes in a number of conditions, nor provides information on the probability of these variations actually occuring.

In classical benefit-cost analysis the economic effects of projects are valued in monetary terms. Market prices are normally used to value the opportunities for production and consumption that are gained or foregone. Parks Canada projects may have a variety of objectives, some of which may be difficult to value monetarily. These include resource conservation, the provision of recreational opportunities, and promoting public awareness and appreciation of their natural and cultural heritage. In some cases shadow prices may be used to simulate what the user would be willing to pay. However, the traditional benefit-cost technique has evolved such that it is now possible to utilize non-monetary variables/benefits in benefit-cost evaluation by converting the alternatives into questions regarding whether a given non-monetary return is worth more or less than a given dollar cost. (Demonstrated in case study - Woods Mill Development Options.) Alternatively, if benefits cannot be quantified monetarily, cost-effectiveness criteria are used: the minimum financial outlay associated with obtaining a given objective/benefit.

Multiplier and distributional effects should not be included in a benefit-cost analysis. Multiplier effects include extra revenue and employment resulting from demands generated by the project. Distributional effects include inter-regional transfers of funds resulting from local purchases or expenditures. Multiplier effects are common to alternative courses of action and distributional effects favouring one region may be offset elsewhere. That is to say, as income and asset values along a new highway increase, for example, income and asset values along alternative routes will decline with the diversion of tourist traffic. Secondary effects may also be double counted as both benefits and costs; as changes in income and consumption, and as increases in productivity and cost-savings. Moreover, secondary benefits cannot be used as substitutes for primary benefits. The users of low cost basic amenities in remote wilderness parks, who do not spend very much in the smaller isolated communities in the vicinity, can receive greater benefits from their visit than the users of higher cost facilities in more accessible parks and developed regions of the country.

User benefits should not be dealt with in the same context as the benefits that accrue to local park employees, contractors and suppliers. Efficient resource allocation is the focus of benefit-cost analysis. It is not concerned with equity: who gains and who loses. Benefit-cost analysis does not show the distribution of benefits and costs, or the relative advantage of different investments in achieving economic growth, stability and regional development. Equity concerns, however, cannot be ignored and information on the potential distributional consequences of public projects should be included for review by the decision-maker. Where benefit-cost analysis would be used to select the best concept for implementing a project, the net secondary benefits (eg. jobs, income, and business opportunities created) would be estimated only after this recommendation has been accepted. If the project has economic impacts outside the immediately affected region (eg. prices, productivity, market structure) input-output analysis (which is discussed elsewhere) should be used instead of cost-benefit analysis.

Benefit-cost analysis is used to study the net effect of major resource allocation decisions on the economy. For example, major new initiatives, such as the establishment of a new park and greater than one million dollar projects requiring Treasury Board submissions could include a benefit-cost analysis. Benefit-cost analysis is used in the selection and recommendation of the best concept. It is especially useful in comparing meaningful options for implementing the project which may have different benefit packages. A road reconstruction project may be proposed because the road's design capacity is exceeded and the level of service is inadequate. Meaningful options for implementing the project could include postponing reconstruction (letting the road deteriorate), fixing it up in the interim, widening the road and or realigning it to permit roadside pull-offs. The option with the highest net present value would be recommended as the best concept for implementing the project.

The following steps should be followed in benefit-cost analysis:

(1) identify the problems, clarify the issues, and set the terms of reference;

(2) clearly define and set the objectives of the investment project;

(3) generate the alternatives that would meet the stated objectives;

(4) identify constraints:
  - policy, legal
  - administrative and budgetary
  - physical and technological
  - phasing;

(5) eliminate alternatives that do not fall within the constraints;

(6) examine each alternative in detail:
  - list assumptions
  - identify benefits and costs
  - value effects monetarily, discounting them back the their present [illegible]ue
  - draw up benefit-co[illegible] profile
  - calculate net present value and test for sensitivity;

(7) finally, prepare a summary report discussing the results of the analysis for each proposed alternative and recommend a preferred investment option.

CASE STUDY - 1

WOODS MILL COMPLEX DEVELOPMENT OPTIONS: ARRAY OF BENEFITS AND COSTS

The following case study is an example of how limited information, and benefits stated in non-monetary terms can be utilized in a benefit-cost analysis to facilitate decision-making by posing a series of questions indicating anticipated incremental benefits for given incremental costs.

1.0 PROJECT

The Woods Mill complex in Smiths Falls was purchased in 1981 for $195,000 first to preserve and protect a heritage resource and secondly, to be an interpretive centre for the socio-economic theme of the Rideau Canal. The complex represents approximately 0.4 acres of land and consists of three buidings: an 1846 grist mill; a second large building constructed around 1875; and an inter-connecting building. The buildings, which are considered to be the last of their type in the area, were designated in 1979 as being of architectural and historical value under the Ontario Heritage Act. They are also registered in the Canadian Inventory of Historic Properties. Other than its heritage value, the large square footage of the complex offered not only many interpretive options, but also the possibility of utilizing some of the space for heritage offices for the Rideau Canal.

Prior to the approval of the Public Consultation document, the issue of the future of the Woods Mill complex needed to be resolved. To that end the Planning Division asked for an examination of the costs and benefits of the several options in order to provide the Executive with a decision-making package.

1.1 Forecast Cost (1983 $, Class D Estimate)

	Past	1983/84	1987/88	1988/89	1989/90	TEC
Purchase	195.0	---	---	---	---	195.0
Stabilization	155.7	118.7	---	---	---	274.4
Interpretation	---	---	---	30.0	185.0	215.0
Offices	---	---	150.0	---	1500.0	1650.0
Total	350.7	118.7	150.0	30.0	1685.0	2334.4

1.2 Planning Phase - Concept

1.3 Objectives

The objective of the analysis was to provide initial enumeration of gross benefits and costs (to the degree known) which would be used by the Ontario Region Executive to facilitate decision-making on the prescribed development options. It was expected that the number of alternatives would be reduced for the detailed benefit-cost analysis required in the Planning Programming Budgeting (PPB) framework.

2.0 CONCEPT

2.1 Study Objectives

To provide an array of benefits and costs for the five mutually exclusive development options.

2.2 Options

The five development options for the Woods Mill complex were:

A. "status quo" which involved the original investment to purchase the site, emergency stabilization in 1981, and additional stabilization in 1983. This amounted to the 500.0 originally approved by Treasury Board;

B. stabilize entire complex and employ exterior interpretation;

C. stabilize entire complex and rehabilitate central portions for interior interpretation;

D. stabilize entire structure and rehabilitate rear and centre buildings for interior interpretation; or

E. stabilize entire complex, rehabilitate central portion for interior interpretation, and rehabilitate front building for Rideau Canal heritage office space.

2.3 Methods

Standard benefit-cost technique was utilized with the benefits stated in non-monetary units. The benefits represent positive community, social and political effects with reference to the public irrespective of who is affected and whether or not the effect is captured in a financial account. Allocative benefits mean favourable consequences representing increased opportunities for consumption/use. However, the nature of Parks Canada's projects, and Parks policy of essentially free visitor use, means most primary benefits are intangible, and hence unquantified.

Costs represent expenditures which the Government will be expected to meet, stated in 1983 constant dollars.

Limitations were mentioned as being evident in several areas. First, as the market analysis of Parks Canada visitor potential in Smiths Falls was not yet available, only a very rough "guesstimate" of the Woods Mill market potential was possible. Secondly, few benefits were quantifiable. Thirdly, parking space was not considered in any of the alternatives. Fourthly, as all Woods Mill costs are Class D Estimates, a sensitivity analysis is considered necessary to indicate the relative scale of the alternatives. Further, the more distant the initiation of development, the more conservative the estimates must be regarded. Finally, the degree of uncertainty which relates to the degree of risk of the various development alternatives, is currently unknown.

2.4 Advantages and Disadvantages of Development Options

The advantages and disadvantages of each option are enumerated below.

2.4.1 Option A ("status quo situation")

Advantages	Disadvantages
1) no additional capital cost	1) barely protects initial investment
2) low O&M costs	2) no exterior or interior interpretation
3) flexibility for future use	3) not in accordance with intent of purchase
	4) perceived to offer negative public image
	5) opportunity cost of lack of benefits of other options.

2.4.2 Option B (stabilize entire structure, exterior interpretation)

Advantages

1) protects initial investment
2) prevents further deterioration
3) low O&M costs
4) considerable flexibility for future
5) exterior interpretation could provide public with indication of function and historical significance at minimal costs
6) aesthetic improvement of site

Disadvantages

1) not in accordance with stated intent of interior use of building
2) lack of use may place Parks Canada in position of appearing to renege on previously stated purposes
3) interpretation of socio-economic theme not fully accomplished
4) additional capital cost
5) lack of benefits of Options C, D, E

2.4.3 Option C (stabilization, interior interpretation)

Advantages

1) protects investment: prevents deterioration
2) fulfills original intent of purchase
3) protects Parks Canada's public image
4) remainder of complex "moth-balled" with little O&M cost
5) enables adequate interpretation of socio-economic theme
6) maintains degree of flexibility for future
7) aesthetic improvement of site

Disadvantages

1) increased capital cost for rehabilitation of central portion
2) O&M costs for central portion
3) lack of expedient use of complex means portion of stabilization cost not utilized
4) lack of benefits of Options D, E

2.4.4 Option D (stabilize, interior interpretation rear and central buildings)

Advantages

1) protects investment: prevents deterioration
2) fulfills original intent of purchase
3) protects Parks Canada's public image
4) remainder of complex "moth-balled" with little O&M cost
5) enables adequate interpretation of socio-economic theme
6) maintains degree of flexibility for future
7) aesthetic improvement of site

Disadvantages

1) increased capital cost for rehabilitation of central portion
2) O&M costs for central portion
3) lack of expedient use of complex means portion of stabilization cost not utilized
4) lack of benefits of Option E

2.4.5 Option E (stabilization, interior "central" interpretation, office accommodation)

Advantages

1) protects investment: prevents deterioration
2) full interpretation of socio-economic theme
3) in accordance with Parks Canada philosophy of housing administrative offices in heritage buildings (where possible)
4) consistent with CORTS policy (#47)
5) optimum utilization of space thus making maximum use of stabilization costs
6) saves office rental costs thus contributing beneficially to amortization of complex
7) contributes to perception of security of Parks Canada's presence in Smiths Falls

Disadvantages

1) increased capital costs for rehabilitation
2) increased O&M costs
3) least degree of flexibility for future

Advantages (cont'd)

8) maximum use of basic
   grant-in-lieu of taxes
9) enables Parks Canada to
   enhance image of Smiths
   Falls due to location
10) more conspicuous Parks
   Canada presence.

2.5 Array of Benefits and Costs

Since the purpose of analyzing costs and benefits is to ascertain the relative merits of alternative ventures, the technique requires the use of marginal costs (the use of average costs exaggerates cost savings) and marginal benefits. Thus decisions can be facilitated by determining whether the incremental benefits are worth more or less than the incremental costs. The original Treasury Board approval of $500,000, which has been fully utilized in the purchase price and emergency stabilization, has been regarded as "fait accompli".

2.5.1 Benefits

Many benefits are only qualitatively known, therefore a rating of the benefits amongst the options was required. This rating is outlined in Table 1. Due to the qualitative nature of the stated benefits, and because not all information was available, it is to be noted that all stated benefits have equal weight. What is indicated is the rating of perceptions of the benefit components by the analyst, confirmed by meeting with others involved in this project. Each of the benefits was scaled with Options A, B, C, D, and E. For example, the benefit component "flexibility of future options" is considered to be the greatest with Option A (hence a score of 5), and is considerred to be the least flexible with Option E which includes interior interpretation, a theatre and heritage office space for the Rideau Canal. In this example, Option E was scored 1.

It was the socio-economic analyst who, after discussions with the planner and Rideau Canal personnel devised the list of benefit components. After the initial rating was completed by the socio-economic

TABLE 1: RATING OF BENEFITS

	Options				
Benefits	**A**	**B**	**C**	**D**	**E**
1) protect investment	1	2	2	2	2
2) prevent deterioration	1	2	2	2	2
3) flexibility of future options	5	4	3	2	1
4) aesthetic improvement of site	1	2	3	3	3
5) fulfills intent of purpose	0	0	5	5	5
6) protects Parks image (keeps stated purpose)	0	0	5	5	5
7) enhances Parks public image	1	2	3	4	5
8) optimum use of space	1	2	3	4	5
9) visitor focus for Rideau Canal	1	2	3	3	3
10) increases awareness of Canal and PC	1	2	3	4	5
11) increases attraction to Canal	1	2	3	4	5
12) increases attractiveness of Smiths Falls	1	2	3	4	5
13) increased PC spending in Smiths Falls contributing monies and jobs to community	1	2	3	4	5
14) Rideau Canal office rental savings	0	0	0	0	5
TOTAL (highest is best)	15	24	41	46	56
Rating of Options	5	4	3	2	1
% Change in Ratings	-	+60% (A-B)	+71% (B-C)	+12% (C-D)	+22% (D-E)

Notes: 1) scale is 1-5, with 1 the lowest and 5 the highest rank.
2) if response is Yes/No; No=0, Yes=5.

analyst, discussions again occurred with the planner, the interpretive officer and the Canal so that all were in agreemnt concerning how the benefit component rated amongst the options.

The Table indicates the following:

a) benefits increase 60% from Option A to Option B; that is, from the addition of monies to complete stabilization and some interpretation, albeit only exterior interpretation;

b) benefits increase 71% from Option B to Option C; that is, from the addition of interior interpretation in the central building;

c) benefits increase 12% from Option C to Option D; that is, with the addition of interpretive use of the back buildings as well as the central building;

d) benefits increase 22% from Option D to Option E; that is, with the addition of Canal office space to the interior interpretation.

Benefits generally accrue in five areas. First, the level of quality of visitor experience is important and is considered to increase through the options under consideration. Currently there is no VRC at the Rideau Canal, and many residents and tourists experience and benefit from the Canal presence vicariously because of scenic canal surroundings. The Woods Mill complex would act as a visitor focus in Smiths Falls for the Canal.

Secondly, a formal exhibit at Woods Mill is expected to draw new visitors to the area. Although the market potential analysis is not yet available, preliminary information obtained from Ministry of Transportation and Communication shows that summer (tourist) by-pass traffic (excludes commercial traffic) on Beckwith Street is 628.6 vehicles per day (total non-commercial summer volume is 12,671.6 vehicles per day). At an average of 3 persons per vehicle, theoretical visitor potential is a currently unknown percentage of 1885 persons per day.

Thirdly, increased benefits will accrue to Smiths Falls because of development of the Woods Mill complex. The site is centrally located and even minimum development and landscaping will enhance the aesthetics along this major thoroughfare. As well, income benefits accrue to the community as a result of four levels of expenditures:

a) direct expenditure by the Canal;

b) reinvestment and respending of the direct expenditure;

c) direct tourism expenditure due to site visit; and
d) reinvestment and respending of direct tourism expenditure.

Specifically, evidence in Ontario shows that every dollar spent produces a ripple effect of $1.69. Locally, this ripple effect is noticed immediately by restaurants, retailers, and service businesses. Further, economic benefits accrue to the municipal tax base due to taxes paid by these restaurants, retailers, and the range of service enterprises thus off-setting municipal budget expenses and relieving local residents of a potentially greater tax burden. The quantification of these benefits is currently unknown.

Fourthly, Parks Canada projects offer the permanent residents of smaller communities many amenities which they would not likely otherwise have, including excellent recreational facilities and first class road systems plus advantages of the economic externalities from permanent Parks Canada staff resident in the area (that is, because Parks staff are paid from the federal treasury new money is entering the community thus increasing the financial value of the community).

Lastly, the development option which involves establishing Rideau Canal offices in Woods Mill represents an economic benefit to Parks Canada, at least equal to the rent currently paid. The current rental costs for the Rideau Canal office is $48,861 and occupying Woods Mill represents a real saving of this rent. The current situation of office rental space in Smiths Falls is unknown, but it is not expected that this option would create an excess of rental space in Smiths Falls. If Parks Canada decides to rent the surplus space in the front building, the rental situation in Smiths Falls must be examined to ensure that Parks Canada is not competing with the private sector.

2.5.2 Costs

Cost components for Woods Mill relate to purchase price, engineering costs, interpretation costs, and operating and maintenance (O&M) costs.

Engineering costs were received from the project architect and represent Class D estimates in 1983 constant dollars. Engineering/stabilization life expectancy is approximately 20 years.

Interpretation costs were received from the senior interpretive specialist. Interpretive exhibits have a life of 7 years and the cost range is due to the fact that currently there are four interpretive options:

1) exterior didactic panels only;
2) interior interpretation with 60 seat theatre having total area of 218 m^2;

3) interior interpretation with 45 seat theatre representing an area of 152 m^2;

4) interior interpretation with a total area of 95 m^2.

Operating and maintenance costs have been estimated at $15,000 annually for heat and $5,000 annually for light and water. This translates into an O&M cost of $22.49 per square metre (neglible at this point). Costs are enumerated in Table 2.

TABLE 2: TOTAL COSTS ($000 1983)

Component	Option				
	A	B	C	D	E
Purchase (1981)	195.0	195.0	195.0	195.0	195.0
Emergency Engineering					
(1981)	170.0	170.0	170.0	170.0	170.0
(1983)	135.0	135.0	135.0	135.0	135.0
Complete Engineering to Stabilize	---	135.0	135.0	135.0	135.0
Engineering "to code"	---	---	80.0-	380.0-	585.0-
Adaptation	---	---	120.0	620.0	780.0
Design	---	40.0		30.0	40.0
Interpretation Options	---	20.0	62.0- 125.0	155.0	62.0- 155.0
TOTAL COSTS	500.0	695.0	777.0 to 880.0	1200.0 to 1440.0	2122.0 to 2614.0
INCREMENTAL COSTS	---	A-B 195.0	B-C 75.0 to 185.0	C-D 423.0 to 560.0	D-E 1345.0 to 1734.0
% INCREASE IN COSTS		39%	12-27%	54-64%	173-197%

Note: The costs in this Table are stated in 1983 constant dollars. A discount rate has not been applied because the time horizon is not yet specified. The detailed benefit-cost analysis required for the T.B. submission will likely use 10%. Therefore, the sensitivity analysis will show 5%, 10%, and 15%.

2.6 Summary of Benefits and Costs

Table 3 represents the summary of the ranking of benefits and quantification of costs. The current Rideau Canal rental costs have been treated as off-setting the cost of Option E.

TABLE 3: Summary of Benefits and Costs

Option	Total Capital Costs[1] ($000 1983)	Office Rental Costs[2] ($000 1983)	Net Costs ($000 1983)	Marginal Costs[4] ($000 1983)	% Change[4] Costs	Benefits[3] (non $ units)	Marginal Benefits[4] (% change)
A	500.0	—	500.0	—	—	15	—
B	695.0	—	695.0	195.0	+ 39%	24	+ 60%
C	770.0- 880.0	—	770.0- 880.0	270.0- 380.0	54- 76%	41	+173%
D	1200.0-1440.0	—	1200.0-1400.0	700.0- 900.0	140-180%	46	+207%
E	2122.0-2614.0	977.2	1144.8-1636.8	644.8-1136.8	129-227%	56	+273%

Notes:
1) Total costs enumerated in Table 2.
2) Present value of office rental for 20 years in 1983 constant dollars. Past percentage increase in rental cost not yet available so no rental increase costs have been included. These will be available for more detailed analyses. Because of the above reason, this cost is underestimated.
3) Unit of ranking is perceived public appreciation value from Table 1 (highest is best).
*4) Incremental changes from the basic Option A.

2.7 Conclusion

The information analyzed in consideration of the five proposed development options for the Woods Mill complex has represented a mixture of quantified and qualified data. The purpose has been to provide management with specific information to facilitate decision-making. Although the juxtaposition of monetary and non-monetary units for comparison represents an evolution of the traditional benefit-cost technique, the decision is essentially reduced to answering the following question: having spent $195,000 to purchase the complex, necessitating the spending of the remainder from the $500,000 for emergency stabilization, which option is the most expedient?

1. Option A which means no additional monies and an usuable facility?
2. Option B which requires an additional $195,000 to stabilize the entire complex and to have exterior interpretation, producing an estimated 60% increase in benefits?
3. Option C which requires (from Option A) an additional $270,000-$380,000 to complete stabilization and have interior interpretation in the central building, producing an estimated 173% increase in benefits?
4. Option D which requires (from Option A) an additional $700,000-900,000 to complete stabilization and have an expanded interior interpretation in both the back and central buildings, producing an estimated 207% increase in benefits? or
5. Option E which requires (from Option A) an additional $644,800-1,136,800 to complete stabilization of the complex, have interior interpretation in the central building and the Rideau Canal offices in the front building, producing an estimated 273% increase in benefits?

2.8 Comments

It is critical to remember that the purpose of this technique is to facilitate decision-making, which the conclusion does by presenting a series of questions regarding the quantity of benefits which can be anticipated from spending incrementally defined amounts of money. The Ontario Region Executive found this array of benefits and costs of value and decided on Option E.

The market feasibility study which the Ontario Regional Office is planning for the town of Smiths Falls is expected within the next year. This Report will suggest the potential number of visitors expected in Smiths Falls, and hence provide an indicator of the potenial visitor use of the Woods Mill complex. This information would also permit an estimation of economic benefits to be made as the Woods Mill complex is on the main street and will provide a Rideau Canal focus in Smiths Falls.

Discounting was not applied at this stage due to the fact that it was not yet clear when work would proceed. Once it is decided when the project will commence, and Class C estimates are available, a detailed benefit-cost analysis is expected and a discount rate can be applied to the stream of costs to be able to state the cost of the project in present value.

PART 2 - LIFE CYCLE COST ANALYSIS

A. Introduction

Life cycle cost analysis is a forecasting tool used to compare or evaluate alternative planned expenditures over a fixed period of time. The total cost of a capital asset during its useful life includes not only planning, design and construction costs, but also operating, maintenance, repair, alteration and replacement costs. Life cycle cost analysis is used to identify the total costs-in-use of an asset, to compare design options and to evaluate investment scenarios. For example, there may be several ways of implementing the project which meet essentially similar functional requirements. Life cycle cost analysis can be used to select the proposal which has the lowest costs-in-use. Different building systems or physical components may have different useful lives. Life cycle cost analysis can be used to help select the most efficient design option. In implementing maintenance or energy conservation measures, life cycle cost analysis can be used to answer the question of whether or not a future saving of x dollars justifies an additional expenditure of y dollars now. By using the life cycle concept, long term capital requirements may be clearly identified for management reveiw at an early stage of project planning. These costs include:

(a) Development
 -land
 -planning and design
 -construction
 -equipment and furnishings

(b) Occupancy or Use
 -programming
 -preventive maintenance
 -routine repairs and replacement

(c) Cyclical Renewal
 -alterations
 -improvements

(d) Disposal
 -salvage

The design life should not be confused with the physical life span of the project. The design life is the period of time from the year the project becomes operational to the year the proposed design capacity is expected to be reached. The physical life is the period of time that the project is expected to operate without major repairs or replacement. It is the expected physical life span that is used in life cycle cost analysis. Different building components or systems may have unequal useful lives. Any cost estimates used will have to be adjusted to reflect these differences.

All future costs are discounted to present value dollars. The discount rate is the average rate of return of funds invested in the private sector before taxes and after inflation. For the analysis of project budgetary requirements the Treasury Board recommends the use of a discount rate of ten per cent, and the use of five and fifteen per cent for sensitivity analysis. (See Treasury Board Guide, page 26.) Sensitivity analysis is used to determine the impact of choice of discount rate (life cycle or other assumptions) on the resulting recommendations.

Discount factors are used to convert future costs to their present worth. Recurring costs can be reduced to a uniform series of annual expenditures to which a discount factor can be applied. The higher the discount factor used, the less attractive it becomes to increase initial expenditures in order to recoup future savings. Moreover, the longer the life cycle or period of use, the higher an annual saving has to be in order to justify an initial expenditure.

Cost-effectiveness criteria, the minimum costs associated with obtaining given objectives over a specified period of use, are used to select the preferred option. Current Government policy is that the preferred option must minimize the total life-cycle costs, not just the costs of design and construction. It is important to start with early planning and design decisions which establish boundaries for later ones and to isolate costs which are predicable and over which management has some control (eg. maintenance costs). These include, in particular, decisions which have significant and continuing cost consequences (eg. OMRA: operating, maintenance, repair and alteration).

Life cycle costs may be used as criteria for the review of the following options:

the mode of implementation
- construction or new facilities,
- modifications to existing facilities, or
- changes in operating practices;

the choice of design
- physical components or building systemss

the level of investment
- scale and phasing
- budget

The following steps should be considered in preparing a life cycle cost analysis:

(1) prepare a problem statement including:
  - a brief description of the project
  - identification of the alternatives to be included in the analysis
  - the rationale for the selection of the alternatives
  - objectives of the analysis;

(2) choose and provide the basic rationale for the parameters used in the analysis
  - baseline year
  - life cycle
  - discount rate
  - cost factors;

(3) describe the alternatives analyzed
  - physical components and building elements included in the analysis
  - the useful lives used
  - the rationale for the inclusion/exclusion of cost factors
  - sources and assumptions about the cost information used;

(4) prepare an analysis of each alternative
  - drawing up a profile of the associated costs
  - calculating their total net present value
  - testing each for sensitivity (to the discount rate and life cycle used);

(5) prepare a summary report recommending a preferred option and identifying other consequences or issues which should be considered.

CASE STUDY - 1

PUKASKWA NATIONAL PARK

ADMINISTRATION BUILDING

This study is an example of a life cycle cost analysis. The purpose of the exercise was to choose, from amongst various proposals, the least costly option for Parks Canada in light of the project's anticipated duration. The study contains a list of options, the format used to conduct the life cycle cost analysis, and a brief discussion of theory.

1.0 PROJECT

1.1 Cost Estimate (1983 $) Class A Estimate

Total	Current Year	1983/84
1,559.9	1,503.5	53.4

1.2 Planning Phase - Concept

Since its creation in July 1971, Pukaskwa National Park has undergone only minor development. The official opening of the park occurred in the spring of 1983, when the transfer of land to the federal government was completed. At present, only temporary facilities located mainly in the Marathon area perform administrative functions. Maintenance work and administrative functions are carried out at a variety of locations, thus causing personnel management problems. Economies of scale could be achieved if all the work was carried out at the same functional location.

1.3 Management Objectives

One of the major objectives of managers in implementing the new building construction project is to consolidate administrative and maintenance workshop operations (carpentry work, etc.) in order to minimize construction and maintenance costs in both the short and long term. Another objective is to improve communications with visitors to the park and local communities, and to avoid duplication of certain activities.

1.4 Comments Unavailable

2.0 PROJECT CONCEPT

The administration building construction project is part of the planning process for the park, i.e. with regard to the management plan (master plan).

2.1 Selection of Options, Choices or Alternatives

A number of alternatives and sub-alternatives were given detailed study. This careful examination of possible alternatives has helped identify and eliminate options that do not meet the technical performance criteria or basic objectives. This phase is essential since there is no point in analyzing alternatives that will most likely be rejected.

The selected alternatives are as follows: Option 1 consists in locating a new building in Marathon, a small community located outside the park; Option 2 involves adding a new section to the building currently used as a repair and maintenance workshop to include administrative services. The workshop area is located at Hattie Cove, a sector where recreational facilities will be concentrated. This option deviates (in principle) from Parks Canada policy. Section 4.3.1 of the policy is very precise on this subject: "Commerical facilities and services such as hotels, stores, gas stations and administrative offices will, where possible, be located in communities adjacent to national parks". (trans.) If the difference in costs between the two alternatives in minimal, Option 1 should be favoured in order that the policy may be adhered to as closely as possible. Major cost differentials between the two proposals might justify the choice of Option 2. This is what we shall attempt to determine in the following sections.

2.2 Preliminary Examination of Potentially Adverse Socio-Eonomic Impacts

Option 2 as defined above, should be given further study since it could be a source of annoyance for the residents of surrounding communities. They may not agree that the administrative building should be moved within the borders of the park. If Option 2 were chosen, it could result in a substantial loss of revenue for some local residents.

2.3 Analysis of Life Cycle Costs

This new analytical tool, developed mainly over the past ten years, should have been used instead of the cost-effectiveness study undertaken by the Ontario Region analysts to determine which alternative minimizes the current total costs of constructing and maintaining the administration building over the next few years.

The results contained in the following pages are from a re-evaluation of the cost-effectiveness study based on the criteria of the life cycle cost analysis. The conclusions are similar, i.e. that Option 2 is clearly less costly than Option 1 over the analysis period.

The format used to conduct the life cycle cost analysis makes it easy to identify the various cost elements of alternatives studied. The period or years during which these costs are defrayed is also included. When the heating costs, for example, are identical for each of the two (or three) options, the analyst may eliminate them and explain why such costs are equal. Nevertheless, all cost elements must be included in order to avoid errors and to make the format easier to read. Moreover, when such information is available, we should be able to include in the analysis the costs of financing the development project and those associated with major repairs that become necessary after 10 or 15 years.

These two options have an identical life cycle and are analyzed as in the example. However, when the two proposed development projects have different life cycles, the use of the current total cost criterion is more effective than the equivalent uniform annual cost criterion, as it is when considering cost increases during the time cycle. Other more complete procedures may also be used to ensure that we analyse two projects with identical life cycles over the time cycle period.

Uniform annual costs must be adjusted if prices change. For example, inflation has varying effects on major cost components, such as energy.

A sensitivity analysis is used to measure the relative impact of any change in inputs (variables) on outputs (results). Also, a comparative analysis of projects using different actualization rates, as conducted in Table 2, helps dispel any remaining doubts about selection of the appropriate actualization rate.

We should bear in mind that the life cycle analysis is based on hypotheses, projections, estimates and events that are not 100% certain. However, this analytical tool brings us one step closer to establishing a rational decision-making process.

Option 1: Marathon

Discount Rate: 10%
Life Cycle: 20 years
Inflation Rate (estimate)
First 5 years: 10%
Next 15 years: 5%

FORMAT USED FOR ANALYZING LIFE CYCLE COSTS

A. NON-RECURRING COSTS

(a) Initial Investment Costs			
1. Land Purchase:	1	25,000	
2. Construction:	1	146,250	
3. Installation of a water supply and sewer system:	1	15,000	
4. Purchase of Equipment:	1	4,000	
5. Purchase of vehicles	1	10,000	(1)
TOTAL:		200,250	x 1=
Current non-recurring Costs:		200,250	

B. RECURRING COSTS (ANNUAL)

(a) Costs of operating and maintaining the Administration Building			
1. Electricity:	1-20	775	
2. Water:	1-20	300	
3. Telephone:	1-20	9,600	
4. Telex:	1-20	1,800	
5. Heating:	1-20	2,000	
6. Snow Removal:	1-20	2,500	
7. Office Furnishings:	1-20	8,000	
8. Salary loss (in employees' time) travelling from the adminstration building to the national park:	1-20	4,100	
9. Operating costs for travelling from the administration building to the national park (gas):	1-20	2,610	(1)
TOTAL:		31,685	x8.514=
Current Recurring Costs:		269,766	

C. CURRENT TOTAL COST: 470,016

Source: Cost Effectiveness Study: Pukaskwa Administration Building, 1980.

NOTES: (1) Coefficient: Present Value.
(2) The costs listed in this table were estimated by various organizations, including Public Works and Parks Canada.

Option 2: Hattie Cove
Discount Rate: 10%
Life Cycle: 20 years
Inflation rate (estimate)
First 5 years: 10%
Next 15 years: 5%

FORMAT USED FOR ANALYZING LIFE CYCLE COSTS

A. NON-RECURRING COSTS

(a) Initial Investment Costs;

1. Land Purchase:	1	NIL	
2. Construction:	1	139,000	
3. Installation of a water supply and sewer sytem:	1	1,000	
4. Purchase of equipments:	1	NIL	
5. Purchase of vehicles:	1	NIL	(1)
TOTAL:		140,000	x 1 =
Current non-recurring costs:		140,000	

B. RECURRING COSTS (ANNUAL)

(a) Costs of Operating and Maintaining the Administration Building

1. Electricity:	1-20	775	
2. Water:	1-20	NIL	
3. Telephone:	1-20	9,600	
4. Telex:	1-20	1,800	
5. Heat:	1-20	2,000	
6. Snow removal:	1-20	500	
7. Office furnishing:	1-20	6,000	
8. Salary loss (in employees' time) travelling from the adminstration building to the national park:	1-20	1,200	
9. Operating costs for travelling from the administration building to the national park (gas):	1-20	1,630	(1)
TOTAL:		23,505	x 8.514=
Current Recurring Costs:		200,122	

C. CURRENT TOTAL COST: 340,122

Source: Cost Effectiveness Study: Pukaskwa Administration Building, 1980

NOTES: (1) Coefficient: Present Value.
(2) The costs listed in this table were estimated by various organizations, including Public Works and Parks Canada.

TABLE 1: COEFFICIENT: PRESENT VALUE

Discount Rate Year	5%	10%	15%
1	0.9524	0.909	0.870
2	1.859	1.736	1.626
3	2.723	2.487	2.283
4	3.546	3.170	2.855
5	4.330	3.791	3.352
6	5.076	4.335	3.784
7	5.786	4.868	4.160
8	6.463	5.335	4.487
9	7.108	5.759	4.772
10	7.721	6.144	5.019
11	8.306	6.500	5.234
12	8.863	6.814	5.421
13	9.394	7.103	5.583
14	9.899	7.367	5.724
15	10.380	7.606	5.847
16	10.84	7.824	5.954
17	11.27	8.022	6.047
18	11.69	8.201	6.128
19	12.09	8.365	6.198
20	12.46	8.514	6.259
21	12.82	8.649	6.312
22	13.16	8.772	6.359
23	13.49	8.883	6.399
24	13.80	8.985	6.434
25	14.09	9.077	6.464

Source: The American Institute of Architects, Life Cycle Cost Analysis: A guide for architects, pp. 37-39.

TABLE 2: COMPARATIVE SENSITIVITY ANALYSIS
(LIFE CYCLE: 20 years)
CURRENT TOTAL COSTS USING VARIOUS DISCOUNT RATES

Discount Rate Option	5%	10%	15%
Marathon (1)	595,045	470,016	398.566
Hattie Cove (2)	432,872	340,122	287,118

2.4 Estimate of Economic Benefits Unavailable

PART 3 - SOCIO-ECONOMIC IMPACT ASSESSMENT

A. Screening and Evaluation of Socio-Economic Impacts

1.0 INTRODUCTION

Social and economic factors are important and integral issues in project planning and should be investigated throughout all project phases, from concept to implementation. Considering these factors will:

(a) assist in problem/project definition;
(b) assess the impacts, both positive and negative, on
  - the park or site in question,
  - visitors to the park or site,
  - tourism in the vicinity,
  - recreational infrastructure,
  - revenues and costs, direct and indirect,
  - local tax base (etc.);

(c) predict the effects of the project, positive and negative, beyond the existing situation, both the park and the potential audience, including primary and secondary implications;
(d) clarify project related changes and enumerate both positive and negative impacts; and,
(e) recommend mitigating measures for negative impacts, as appropriate.

Although socio-economic screening is different from environmental impact analysis in that it proposes to analyze both beneficial and adverse effects, it may be regarded as complementary to environmental impact analysis.

The Environmental Assessment and Review Process (EARP) directs all departments and agencies: to take environmental matters into account throughout the planning and implementation of projects; to undertake an assessment of potential environmental effects before commitments or irrevocable decisions are made; and, to incorporate the results of environmental assessment and review in the design, construction, implementation and operation of projects giving environmental problems the same degree of consideration as that given to economic, social, engineering and other concerns. Application of the process is mandatory for all projects except where action is urgently required to alleviate conditions which threaten resources, public health or safety (P.C. Directive 2.4.2).

2.0 SCREENING

Screening is the first stage of the process to identify potential beneficial and adverse socio-economic impacts. The purpose of this step is to focus attention on specific issues from a broad spectrum of potential impacts. At the concept stage of project development, the screening exercise is to identify significant effects, positive and negative, from the proposed project. Consideration is given to both the project construction phase and the implementation phase.

2.1 Screening Factors

The factors to be considered during the screening exercise fall into three major areas: regional integration, visitor use, and traditional land use. Components of these areas are discussed below.

2.1.1 Regional integration

Regional integration is a policy of Parks Canada and the project sponsor should be aware of a projects' potential social and economic impact on the area. Specifics relate to:

(a) the number of tourists to the area - will the number increase or decrease as a result of the proposed project?

(b) number and type of recreation facilities in the area - does the proposed project add to either the number or type of facilities available outside the park?

(c) what is the projects' effect on employment? Could the project create full-time/year-round jobs either directly related to the project, or indirectly (i.e. does it create jobs in a service or manufacturing sector that produces a product the project will need)? Could the project result in additional part-time/seasonal jobs either at the Park, or indirectly in a tourism related area (e.g. restaurants, service stations, souvenir stops, etc.)?

(d) does this project have any impact on existing tourist accommodation facilities? If the project results in additional tourists then, potentially some may stay in local hotels/motels. If the project results in extending the season at the Park, or in enabling a winter use (e.g. provide groomed cross-country ski trails), local accommodation facilities may benefit.

(e) will the project result in an impact on local business opportunities? If the project draws additional tourists or increases the average length of stay, local businesses may have increased profits, or they may need to expand either their services or facilities. Or, will the project negatively impact local businesses by competing with the private sector?

(f) what is a project's anticipated effect on the community's level of income, property values, tax base...? Income benefits accrue to the community as a result of four levels of expenditures:
  (i) direct expenditures by the park/site;
  (ii) reinvestment and respending of the direct expenditures;
  (iii) direct tourism expenditure due to site visit; and
  (iv) reinvestment and respending of the direct tourism expenditure.

As well, economic benefits accrue to the municipal tax base due to taxes paid by restaurants, retailers, and the range of service entreprises, off-setting the municipal budget expenses, relieving local residents of a potentially greater tax burden.

(g) what is the public reaction to the proposed project? Public consultation may be necessary recognizing the importance of Parks Canada's image.

(h) other components that a proposed project may impact relate to:
  (i) is there any effect on local transportation systems (buses, trains, roads, parking lots);
  (ii) is there any effect on community services (hospitals, utilities, etc.) or community development (demand for new housing, etc.)?

Projects would rarely have impacts in these areas but they are mentioned for project sponsors to be aware of.

2.1.2 Visitor use

Visitor use of parks and sites is important, for our mandate is to encourage public understanding and appropriate use of parks and sites for appreciation and enjoyment. Factors to be considered during a proposed project's screening are:

(a) number of new visitors expected to the park as a result of the project - will they increase, decrease or remain constant?

(b) will the project have any effect on the visitor's length of stay to either the park or the area?

(c) is the project due to demand, or will it result in excess capacity? It is expected that the project sponsor will be able to statistically justify the project, and its scope.

(d) how will this project impact on the other recreation facilities and services in the park? Will the completed project compete with or be complementary to other park facilities? An increase in serviced campground capacity could necessitate additional washrooms and an increased potable water supply. Or, additional camping sites may be required to enable use rotation to relieve stres or to prevent site deterioration.

(e) is the project required to prevent or ameliorate an health or safety issue? Such a project might be relocation of a parking area across a main park road as the existing situation has visitors crossing the main road just beyond a curve which has previously meant some near-accidents.

2.1.3 Traditional land use

In some areas and parks a proposed project may impact on traditional land use. This should be noted during the screening phase in accordance with the following:

(a) will the project impact any commercial activities (agriculture, fishing, hunting, trapping, forestry...)?

(b) will the project have any impact on domestic or subsistence activities (fishing, hunting, trapping, gardening, wood cutting, berry picking...)?

(c) will the project have any impact on native land use?

2.2 Scoring

The screening factors discussed above, and enumerated in Table 1, are scored as being a beneficial impact (+), an adverse impact (-), or as a factor which is not applicable (N/A) for the project under consideration. Each factor should be examined and scored for both the construction phase, and the implementation phase.

When the scoring is completed, both the positive and negative impacts should be noted. Where negative effects are flagged, further investigation may be warranted so that recommendations for mitigation can be presented. Once the decision is made to proceed to the project definition phase it is expected that both the positive and negative impacts will need to be quantified; that is, how many jobs are expected and for what duration? how many new visitors are expected? what economic benefits are expected? what disruptions, dislocations, displacements (either temporary or permanent) are expected? can the community infrastructure (housing, roads, utilities) handle the expected additional burden placed on it during each project phase?

When detailed information is given by the project sponsor to the decision-makers, the decision on the proposed project could be:

(a) no changes, further actions or assessments are required; project proceeds;

(b) modification(s) of the proposed project, design, scale, construction, or management practice is required;

(c) that studies be conducted to determine the extent to which a project has beneficial or adverse socio-economic repercussions;

(d) that an alternative course of action be considered;

(e) that third-parties and others impacted be compensated; or

(f) the project be postponed or abandoned.

SOCIO-ECONOMIC IMPACT ASSESSMENT: SCREENING FOR PROJECT ____________________

Factor	Construction Phase (+, -, N/A)	Implementation Phase (+, -, N/A)	Comments
1. REGIONAL INTEGRATION			
(a) number or tourists			
(b) number of recreation facilities			
(c) type of recreation facilities			
(d) effect on tourist accommodation			
(e) effect on local business (state how)			
(f) employment			
(i) full-time (state direct, indirect)			
(ii) part-time (state direct, indirect)			
(g) effect on community level of income, property values, tax base...			
(h) public opinion			
(i) other (specify)			
2. VISITOR USE			
(a) new visitors expected			
(b) effect on length of stay			
(c) effect on park capacity (specify)			
(d) effect on other park facilities and services (specify)			
(e) effect on health or safety factor			
(f) other (specify)			

Factor	**Construction Phase (+, -, N/A)**	**Implementation Phase (+, -, N/A)**	**Comments**
3. TRADITIONAL LAND USE			
(a) effect on community activity (specify)			
(b) effect on domestic/subsistence activities (specify)			
(c) effect on native land use			

SUMMARY - COMMENTS

1. BENEFICIAL IMPACTS

2. ADVERSE IMPACTS

3. ADDITIONAL INFORMATION REQUIRED

4. RECOMMENDATIONS

PROJECT SPONSOR: ______________________ **DATE:** ______________________

CASE STUDY - 1

KASKAWULSH GLACIER ACCESS SYSTEM

This case study is a detailed explanation of the screening process to determine both positive and negative impacts of the proposed project. The three major component areas are: regional integration, visitor use, and traditional land use.

1.0 PROJECT

The Kaskawulsh Glacier in Kluane National Park is currently accessible only to hikers. The Glacier has been identified as a major interpretation theme and an access system has been proposed in the 1980 Management Plan to make this major park feature available to all park visitors.

The access system involves a number of components: the access road, visitor reception centres, transit vehicles, trail construction, stabilization of "gold rush era log cabins", brochures and interpretation. The three subprojects of primary importance are the access road, visitor reception centres, and transit vehicles. These projects are the subject of the present screening example.

A low grade access road is proposed for the east side of the Slims River Valley stretching approximately 25 km from Kluane Lake south to the Glacier. A preliminary route was completed in the summer of 1983. Environmentally compatible "all-terrain-vehicles" (ATV's) are considered sufficient to meet expected visitor numbers and accommodate a possible breakdown of one vehicle.

A visitor reception centre will be constructed at the park entrance and another one on the quarry and borrow pit site at Kaskawulsh Knob. The former will function as information centre for the park and region, and as a staging and departure point. The latter would act as bus terminal, interpretation centre, and departure point for climbers.

During the analysis stage of the planning process, descriptions and evaluations were completed for geology, geomorphology, vegetation, wildlife, and climate of the Slims River Valley. The Ecological Lands Survey Landscape Classification was applied to the area and the federal Environmental Assessment Review Process (EARP) was administered.

Parks Canada plans to initiate discussion with the Yukon Territorial Government to develop co-operative tourist plans. Parks Canada's centennial celebration is in 1985 and it is hoped this access system could be operational before May of that year.

1.2 Forecast Costs (1983 $, Class B and C Estimates)

Subprojects	1982/83	83/84	84/85	85/86	86/87	TEC	Class of Estimate
Access Road	148.0	50.3	577.1			775.4	B
VRC		128.2	812.3	424.6		1365.2	C
ATV's				770.0		770.0	C
Others	49.5	138.2	234.0	149.2	89.4	660.3	C
TOTAL	197.5	316.7	1623.4	1343.8	89.4	3570.9	C

Recurring O&M Costs - 25.7

2.0 SCREENING FOR THE KASKAWULSH GLACIER SYSTEM

Screening for social and economic positive and negative impacts will occur at the project concept phase. The screening exercise involves an examination of components found in three major areas: regional integration, visitor use, and traditional land use. A description of the specific issues identified in each area are given in the following sections.

2.1 Regional Integration

The potential impacts on economic development and local employment from the development of the access system are considered positive. The various effects are discussed in detail below.

2.1.1 Number of tourists

Approximately 386,000 people entered the Yukon in the calendar year of 1981. An estimate of 5,000-30,000 Yukon visitors are believed to be lost because of lack of attractions, accommodations and food services. This paucity of tourist features was noted by tour companies using the area.

> "The most serious threat to the continued viability of the entire tourism industry in the Yukon is a lack of tourist attractions"[1]

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[1] 1980 Canada/Yukon Tourism Agreement.

The Kaskawulsh Glacier access system could act as a tourist destination node, increasing tourism to the Yukon and to the Kluane area, and prolonging the length of stay.

2.1.2 Number and type of recreation facilities

The major activities in the Kluane region require few facilities. Four examples are hiking, visiting historic sites, camping and nature study. Only a minimal amount of services are provided for this area. There are no facilities comparible to the access system, therefore it adds to the number and type available.

Log cabins built during the gold rush era, located on the west side of Slims River Valley, are being considered for stabilization. These buildings increase the "sightseeing" opportunities.

2.1.3 Employment

There are full-time and part-time employment opportunities associated with the construction and implementation phase of the Glacier Access System. Specifically, people are needed for the system's construction, operation, maintenance, marketing, and interpretation. Construction jobs would be seasonal full-time until the project is completed, while positions related to the system's operation would be available between May and August. With the Yukon's unemployment rate at 13.6% for March 1982, compared with the highest Canada figure at 10.5%, the estimated requirements of 8 person-years for the system's operation is a significant addition to their employment opportunity situation.

If the project is successful in attracting new tourists to the area, some indirect employment opportunities could open up. With increased demand for accommodation, food, and tourist services, the private sector may develop either through expansion of existing businesses or the introduction of new ones. Overall effects of the Kaskawulsh Glacier access development on employment are considered positive.

2.1.4 Existing accommodation facilities

There are approximately 100 accommodation units in hotels and motels nearby Kluane National Park for park staff and visitors. They are located in the communities along the Alaska Highway at Burwash Landing, Destruction Bay, and Haines Junction. With annual visitation figures for the glacier access system estimated around 12,000, it is questionable as to whether these facilities will be able to meet this demand. It becomes highly likely that existing businesses can increase profits and potentially be able to expand.

The housing requirements for the workers during the construction phase have implications for improving year-round business, but this would be short lived, depending on the duration of the project.

2.1.5 Local business opportunities

Presently, tourists in the Yukon generally drive to Alaska for their overnight accommodation. Due to the length of the Kaskawulsh Glacier tour and the Glacier's isolated location, accommodation patterns could change to involve Yukon facilities, meaning an additional day in the trip schedule in the Yukon. Using the Yukon Territorial Government's visitor expenditure estimates of $100-125 per day, and the visitor range of 6,000-13,000 people who might use the proposed facility, the economic benefits to the area as a result of the access system development can be calculated as follows:

# visitors	expenditure/day	estimated benefits
6,000	$100-125	$ 600,000- 750,000
13,000	$100-125	1,300,000-1,625,000

Therefore, the economic benefits for the area derived from the development of the access system are between $600,000 and $1,625,000 for the first year of its operation. This creates opportunities for existing businesses to expand or new ones to be developed.

There are other local business opportunities directly related to the access system. These include contracts for construction of the access roads, visitor reception centres, operation of transit vehicles, maintenance and repair of the ATV's, implementation of the interpretation program, and promotion.

To increase the potential for the operations privatization and success, Parks Canada may permit the development of on-site accommodation, further increasing business opportunities for the private sector.

Additional marketing opportunities become available to the Yukon Territorial Government with respect to the tourism industry as a result of the Kaskawulsh development. YTG could provide incentives for the expansion of existing service industries. An adequate land base could be provided for support service development. The Yukon Territorial Government could construct accommodation facilities to lease to developers in the private sector. It is also suggested that the government staff could help operate the VRC.

2.1.6 Community level of income, property values, and tax base

The anticipated effect of the Kaskawulsh Glacier access system on the community's level of income and tax base is positive. Since visitors are either from another country (U.S. or overseas) or another part of Canada, they bring new money into the area through their expenditures.

Due to the increase in accommodation demands as a result of staff and visitors, there is a potential for an increase in property values due to the limited supply although this increase is expected to be small.

There are various effects occurring at the construction phase of this project. For one, direct expenditures for construction by the Park are considered a positive economic externality because Parks Canada is a federal department and thus brings net income to the area. The effect of reinvestment and respending by local businesses cannot be determined at this time because it is unknown how much they bring in from outside the region.

As well, economic benefits accrue to the local tax base because of local taxes paid by these businesses.

The effects of the implementation phase are different from those occuring during construction. There may be increases to local businesses, which increase economic benefits accruing to the local tax base. Direct expenditures in the Yukon by each new visitor is calculated to be $100-125 per day. There are economic benefits to the area by having Parks Canada staff paid from the federal treasury, bringing new money to the area. Lastly, there is reinvestment and respending of these direct expenditures but the "ripple effect" is not known at this time.

2.2 Visitor Use

The specific factors to be considered in the project's screening that relate to visitor use are given below.

2.2.1 Number of new visitors

Visitors are considered for the implementation phase of the project only.

The following visitor market forecasts have been given for the Kaskawulsh Glacier access system:

1) a 'ball park' figure of 12,000-13,000 visitors are predicted for the first year of operation although it could be possible for visitation to be as low as 6,000;

2) Growth in the numbers of visitors are expected in the first 5 years of the system's operation.

The visitors making the trip to the glacier will fall into one of the following four categories:

1) United States tourists travelling by private vehicle through the Yukon;

2) Canadian (non-resident) tourists travelling by car in the Yukon;

3) United States, Canadian, and other foreign tourists travelling by mass mode package tours (generally bus); and,

4) Yukon residents.

There were 64,500 visitors to Kluane National Park in 1982. It is not known whether the tourists to the access system would be considering a proportion of the park attendance or if these can be considered "new visitors".

2.2.2 Visitor's length of stay

Since the tour is between 2-4 hours, and its isolated location requires travel time to arrive at the site, an additional length of stay of one day in the Yukon is highly likely. This is a positive effect from the Glacier Access System.

2.2.3 Demand for the project

The development of the access system is derived from Parks Canada desire to increase the number of people that will be able to appreciate and enjoy a significant feature of our Canadian landscape. As well, there is a significant contribution to the local economy to be made by creating a destination node in the Yukon, thus improving the Yukon's tourism industry. Support service development such as restaurants and hotels would further increase the area's capacity for tourism.

2.2.4 Impact on Kluane National Park

The only service or facility in the park at present is that associated with the information centre at its entrance.

A second visitor reception centre located at the glacier will increase services offered by the park. This provides a starting point for hikers, washroom facilities, shelter from the elements, and additional interpretation of the area. This facility also plays a role in improving the wilderness user's safety.

There is an underused campground at Kathleen Lake. If people stayed longer or new tourists entered the area, increased use can be expected, therefore, increasing the efficiency of this Park's Canada facility.

2.3 Traditional Land Use

Kluane National Park has not historically sustained any commercial, domestic or subsistence activities. It is uninhabited, excluding its visitors who hike or fish. Therefore, there are no significant impacts of this development on traditional land uses.

2.4 Mitigating Measures for Negative Impacts

One potentially negative socio-economic impact is overcrowding of the scarce accommodation facilities by new employees and tourists. This lack of accommodation could discourage new visitors if developments that are to meet the demands do not occur fast enough.

Encouragements for development by Parks Canada and the Yukon Territorial Government would help alleviate this potentially negative impact.

There are a number of precautions to be taken to reduce negative environmental impacts associated with increased visitation to this particularly sensitive area. For example, no private or commercial vehicles other than ATV's with their low pressure tires will be allowed to use the proposed low grade road. No other facilities such as a restaurant will be permitted at the Glacier's visitor reception centre. Restoration is identified for areas disturbed by the project's construction.

2.5 Comments

The previous descriptions have been given to explain the screening process, but when this exercise is actually being done for a proposal only the completion of the following table is required.

TABLE 1

SOCIO-ECONOMIC IMPACT ASSESSMENT: SCREENING FOR PROJECT KASKAWULSH GLACIER ACCESS SYSTEM, KLUANE NATIONAL PARK

Factor	**Construction Phase (+, -, N/A)**	**Implementation Phase (+, -, N/A)**	**Comments**
1. REGIONAL INTEGRATION			
(a) number of tourists	N/A	+	added attraction increases visitors
(b) number of recreation facilities	N/A	+	tourist facilities lacking in area
(c) type of recreation facilities	N/A	+	1st of its type in the area
(d) effect on tourist accommodation	+	+	increase demand by staff & visitors
(e) effect on local business (state how)	+	+	opportunity to construct, operate and provide support services
(f) employment			
(i) full-time (state direct, indirect)	+	+	direct employement effect -tour operators, construction workers
(ii) part-time (state direct, indirect)	+	+	direct employment effect - park staff, construction workers
(g) effect on community level of income, property values, tax base...	N/A	+	in construction phase- money stays in area; in implementation phase- money from non-local tourists causes increase.
(h) public opinion	N/A	+	
(i) other (specify)	N/A	N/A	
2. VISITOR USE			
(a) new visitors expected	N/A	+	new attraction draws new visitors
(b) effect on length of stay	N/A	+	isolated location-travel time needed
(c) effect on park capacity (specify)	N/A	+	attempt to meet perceived potential demand
(d) effect on other park facilities and services (specify)	N/A	+	expansion to entrance fac & serv
(e) effect on health or safety factor	N/A	+	VRC at icefield increases safety
(f) other (specify)	N/A	N/A	

Factor	Construction Phase (+, -, N/A)	Implementation Phase (+, -, N/A)	Comments
3. TRADITIONAL LAND USE			
(a) effect on community activity (specify)	N/A	N/A	uninhabited area
(b) effect on domestic/subsistence activities (specify)	N/A	N/A	none present in park area
(c) effect on native land use	N/A	N/A	traditionally unused wilderness

SUMMARY - COMMENTS

1. BENEFICIAL IMPACTS - increase to the number of tourists to the Yukon and to the Kluane area
   - increase to the length of tourist's stay in the Yukon
   - increase to type and number of recreation facilities in the area and in the Yukon
   - increase direct and indirect employment opportunities
   - increase local business opportunities - expansion of existing and development of new ones
   - economic benefits: increase to income level in communities mo/by and to taxbase.

2. ADVERSE IMPACTS - overcrowding of scarce accommodation resources
   - environmental impacts - costly to control, restore
   - potential increase in property values

3. ADDITIONAL INFORMATION REQUIRED - visitor market predictions need to be improved,
   - as well, more analysis is needed with respect to economic impact and repercussions on patterns of user of other park facilities.

4. RECOMMENDATIONS - programs to encourage local businesses to expand or be developed i.e. increase accommodation for visitors.

PROJECT SPONSOR: ____________________ DATE: ____________________

B. Estimation of Secondary Local Economic Impacts

One of the arguments in favour of increased spending on park projects is their contribution to local employment, income, consumption and investment opportunities. That is to say, the net value of the project to employers, employees, and suppliers not to park users. Local economic impacts can be defined as net secondary benefits accruing to the immediate region from the redistribution and multiplier effects of park and visitor expenditures. It excludes any costs associated with the generation of these spinoffs and local use of the park project.

From the national and even possibly the regional point of view, the secondary benefits associated with the project may cancel each other out. For example, as income and asset values in proximity to a new tourist route rise, income and asset values along alternative routes will decline with the diversion of traffic. If the presence of the project means that unemployed or underemployed resources will be fully employed, economies of scale will be achieved by local producers, exports by local producers will be increased or a wider range of goods and services will be made available to resident consumers, then there will be legitimate gains to the national economy.

The major economic impact of a park project can be calculated from direct local purchases or expenditures. Part of the additional business revenue resulting from demands generated by the project will be paid out in the form of profit and income. This generates another round of local consumer expenditures. From each round of consumer expenditures a constant portion of income will be respent locally.

TABLE 1: INCOME MULTIPLIER

$\hat{y} = y1 \frac{1}{1 - K1K2}$ where

$\hat{y}$ = estimated local income effect;
$y1$ = the first round income payments from local consumer expenditures;
$K1$ = the proportion of income earned by local residents which is respent locally;
$K2$ = the proportion of local sales which is paid out as income and profit to residents.

Normally the parametres of a regional income multiplier are estimated from a survey of local household expenditures (K1) and local business revenue (K2).

Knowing the number of jobs generated from local retail sales, this ratio can be used to estimate the number of additional jobs that would be generated from additional local sales revenue.

TABLE 2: EMPLOYMENT MULTIPLIER

$\hat{E}p = Et \times Sp/St$ where

$\hat{E}p$ = the additional jobs created from project, visitor and employee expenditures;
Et = total local employment in retail sales;
Sp = additional sales revenue from visitors attracted to the region by the park, local consumer expenditures made by project employees, and local purchases made by the project;
St = total retail sales in local commercial outlets.

In order to calculate this multiplier the following information is required:

(a) local project employment and employee earnings;
(b) local park and visitor expenditures by commodity type;
(c) wages, salaries, and profit as a percentage of local retail business revenue; and
(d) the employment in the local retail sector.

The economic impact area should be based on travel patterns and the location of complementary tourist facilities within one night stay of the park (eg. a four hour drive). It is only over a limited area that secondary benefits can be said to exist. The income and employment effects of successive rounds of park and visitor expenditures will depend on where the expenditures are made, the sector of the economy involved, the geographic origin of visitors and the source of supply. If what is consumed is not produced locally or nationally, the benefit of these expenditures will be felt elsewhere. Local business activity generated by tourism and construction is highly seasonal in nature. At other times of the year these business concerns operate below capacity. Additional demand will not necessarily generate additional jobs. There is a need to convert part-time and part-year job opportunities into comparable units (eg. person-years) in order to distinguish job opportunities of varying degrees of duration.

Local costs include foregone employment and income from competing domestic and commercial use of the natural resources. Any disruption and displacment of local business operations and housing, additional costs of local government, as well as other inconvenience and discomfort experienced by local residents (eg. traffic congestion) are examples of third party or bystander costs of government projects.

Generally speaking, there are three kinds of secondary or indirect economic effects which need to be considered. These include distributive effects, any interregional transfers or public funds or visitor spending; multiplier effects, extra sales and production resulting from the demands generated; and increased opportunity costs. Table three illustrates the type of secondary local impacts which may arise.

TABLE 3: SECONDARY LOCAL ECONOMIC IMPACTS

(A) SECONDARY/INDIRECT BENEFITS
- direct employment
- wages and salaries paid to employees
- purchases of goods and services
- additional jobs, income and profit, as well as business opportunities, created by park/project
- additional local tax revenue
- other public expenditures and private sector investments resulting from the project
- increased properry values.

(B) THIRD PARTY/BYSTANDER COSTS
- lost employment and income from commercial and domestic use of natural resources
- loss of business, competition with private sector operators
- lost housing
- additional local servicing requirements and infrastructure improvements required
- increase in the local cost of living or taxes
- social costs such as increased crime, vandalism, over-crowding and traffic congestion during the visitor season.

Initial construction and annual operating expenditures, as well as periodic purchases of services and materials from regional suppliers, can result in varying amounts of local job and income creation. When the facility is under construction contractors may not be obliged to hire locally. Men and equipment can be brought in from the outside. The bulk of local employment associated with the operation and maintenance of park facilities is casual and seasonal in nature. Moreover, because Parks Canada is obliged to use the Canada Employment Centre it draws from a regional, not a local, pool of labour. There are many candidates, few jobs and who gets these jobs, in many cases, changes from year to year. During the peak employment season, the operation and maintenance of park facilities may only provide work for unskilled inexperienced persons who are marginally attached to the labour force. Equipment and supplies purchased by government departments must often be obtained using standing offer agreements and local suppliers can be left out when purchases are made elsewhere. In short, the construction and operation of park facilities may not provide a dependable source of employment and income for many local residents.

Local tourist expenditures for transportation, meals, and accommodation (etc.) by users of the facility are all potential sources of income and employment in the area. These expenditures do not include user fees but only local expenditures associated with outdoor recreational and educational activities in the park. A general expansion of tourism related economic activity may also have effects on other sectors of the local economy (eg. retail sales).

Other public sector expenditures may be induced by the project. A project may require additional public expenditures to improve the local public services, such as access roads, utilities, waste water and sewage treatment. At the same time, park developments may encourage additional private sector investment in the local area (eg. tourist accommodation).

Various costs may also be imposed on local residents. For example, local income and employment may be lost due to the disruption of local business or a decline in park visitation during the construction of a facility. Park developments also prohibit the commercial exploitation of related natural resources by local residents. Park construction activities, operation and increased visitor use of a facility may impose external costs on residents such as higher prices, traffic congestion, and alter their lifestyle. It is worth noting that those affected most by higher prices, congestion, and poorer public services, are not necessarily those who benefit from employment opportunities, higher sales and rising property values stimulated by the project.

Where a project has a substantial economic impact ouside the immediate Park region, input-output analysis should be used. After national and provincial economic sectors have been defined by the analyst, a transaction matrix is created, in which what each economic sector buys and sells from other sectors is estimated and outside economic transactions (imports and exports) are also identified. A matrix of coefficients is derived from which the employment and revenue generated from the project can be estimated. Statistics Canada has created National and Provincial Input-Output Models which can be used for this purpose. Another model which also may be useful is CGOT's Tourism Export and Impact Model.

CASE STUDY - 1

BRAYCO CAMPGROUND ACQUISITION

The following case study is an example of the type of information and methodology that would be found in the evaluation of socio-economic impacts of a proposal. This type of analysis assisted Parks Canada in selecting the appropriate option concerning the status of the privately owned campground located near Pacific Rim National Park. It evaluated the impact of the possible closing of the private facility on the camping demand in the Pacific Rim National Park area.

1.0 PROJECT

1.1 Forecast Cost ($ 1978)
Total: $3,250,000

1.2 Planning Phase: Concept

1.3 Management Objectives

Pacific Rim is a destination park and in order that visitors to the park be afforded the greatest possible opportunity to appreciate and enjoy the park's natural values, camping facilities must be provided. It is Parks Canada's policy that campgrounds in National Parks be developed in ways which require a minimum of support facilities and services, and that wherever possible, park campgrounds not compete directly with private sector campgrounds if the latter can provide an adequate supply of accommodation which meets Parks Canada's standards with respect to facilities and services. The philosophy that campgrounds should not be constructed within Park boundaries if private enterprise can be encouraged to develop and operate facilities nearby was a guiding principle for decision-makers when choosing among options for Pacific Rim. Indeed, a letter to the owner of Brayco campsites in 1972, outlining Parks Canada's policy towards private campgrounds stated:

> "Our present park policy stresses that, wherever possible and especially in the smaller parks, encouragement will be given to locating major tourist facilities such as motels, hotels, stores and related services in areas outside the park boundaries. In line with this policy, we encourage private enterprise to construct and operate serviced campgrounds outside the park as well."

1.4 User Requirements

Brayco Campground was built on 74 acres of land directly bordering the park. An additional 142 acres was acquired for future development. BY 1975, 400 campsites and 114 trailer sites had been developed. The camp infrastructure includes a sophisticated sewage system, power and water hook-ups, a store, games room, laundromat, and hot showers. There is direct access to the beach located 0.4 km. from the campground. The initial capital investment was estimated by Bert Braiden, the majority shareholder, as being in the area of 3.2 million dollars.

1.5 Comments

The decision was taken to maintain the status quo and none of the options were implemented. As a precautionary measure a temporary overflow area was developed in the Park.

In deciding not to buy out or otherwise assist Braiden financially, decision-makers were really swayed by the fact that visitor use forecasts indicated that Braiden had excess installed capacity. SED studies indicated that the use threshhold set by Braiden in order for him to remain in business would not be realized until 1985. It was felt that Parks Canada should not assist an operation which was experiencing financial difficulties brought about as a result of a bad business decision by the private entrepreneur - i.e. the decision to install a site capacity of 1400 without first doing market surveys or visitor forecasts to determine visitor demand. In adopting this position Parks Canada "called Braiden's bluff", the campground did open in 1978 and no shortfall occurred. However, financial problems continued and eventually the campground was sold. The operation has recently been put into receivorship. Parks Canada may well find itself once again faced with the problem of quickly providing 500 campsites.

2.0 PROJECT CONCEPT

In 1978 Parks Canada examined the merits of acquiring a privately owned campground located on the border of Pacific Rim National Park. This was developed, owned and operated by Brayco Development Ltd., a private construction company, at an initial capital cost of approximately 3.2 million dollars.

The campground opened in 1975 after receiving assurances from Parks Canada that if adequate campground facilities were developed outside the park unit to handle existing and expected demand (SERD estimated that by 1980 a total of 800 sites would be required), only the 90 site Green Point Campground inside the Park would be maintained and camping on Long Beach would be phased out. Parks Canada estimated that an additional 500 sites would be required to supplement the Parks' own camping facilities and meet visitor demand in 1975.

In 1976, alleging that he had detrimentally relied on Parks Canada's assurances, Braiden requested that Parks Canada guarantee a yearly average of 35,000 camper units at $5.00 per unit. Braiden alleged that he was operating at a loss, which loss was compounded by the $3/night fee for sites in Green Point Campground compared with the $5/night fee charged at Brayco Campground. Braiden noted that although 540 sites had been developed in his campground, the installed infrastructure was designed to handle 1400 campsites. Inferring that Parks Canada had, at the very least, a moral obligation to assist him financially, Braiden suggested that it would be in Parks Canada's "best interest" to purchase Brayco Campground and to develop the under-utilized capacity in order to meet future demand.

Acquisition of Brayco Campground was not seriously considered until 1978 at which time Bert Braiden put Parks Canada on notice that because of recurring operating losses he would not be opening his campground for the 1978 season.

2.1 Option Analysis

In response to the anticipated shortfall in camping sites, Parks Canada considered a number of options which would ensure the continued provision of an adequate number of camping sites. If the private campground were closed, 514 fewer campsites would be available to Park visitors, reducing the total available sites from 666 to 152, the latter being the capacity of Pacific Rim's Green Point Campground in 1978. The acquisition of an existing private campground, albeit outside the boundaries of Pacific Rim National Park, would be one way to ensure the provision of an adequate supply of camping sites.

A number of other options were examined as well:

i - close the Park campground so that visitation to Brayco Campground would increase;
ii - equalize prices charged by Parks Canada and by Brayco;
iii - effect a land exchange with the Clayoquot Indian Band; under this option Parks Canada would purchase Brayco Campgrounds for the $3.25 million asking price and immediately designate the land as an Indian Reserve; the campground would be managed and operated by the Clayoquot Indian Band. In exchange, Parks Canada would acquire and rehabilitate reserve lands situated within park boundaries; Parks Canada would thus acquire a major day-use area;
iv - purchase Brayco and operate it as a concession;
v - build a new campground in the park;
vi - purchase the Brayco Campground and sell it to an entrepreneur willing to operate the business;
vii - lease Brayco Campground from Bert Braiden and operate it as a concession.

In the end result Parks Canada decided neither to purchase the Brayco Campground nor to pursue any of the other options examined. A temporary overflow campground inside the park was developed. Bert Braiden eventually opened his Campground in the 1st week of June 1978, and the shortfall of sites did not occur that year.

2.2 Preliminary Screening of Potential Adverse Socio-Economic Impacts

The owner of the private campground alleged that Parks Canada policy with respect to park campgrounds created an adverse economic impact vis à vis private campgrounds. Braiden alleged that the existence of campsites within the park and the lower fee charged for these sites lessened demand for private campground sites. Braiden also felt that because visitor use was not sufficient to offset his expenses nor to recover his capital investment, Parks Canada had an obligation to "bail him out" as well as an obligation to the Canadian public to ensure the continued provision of campsites.

Parks Canada, faced with a formal offer to sell, had to quickly identify the most appropriate response. It was necessary to determine if in fact Parks Canada policy was impacting negatively on the private sector, and, if such were indeed the case how this situation could be remedied in a manner compatible with Parks Canada's philosophy of encouraging private sector involvement in the provision of tourist facilities.

3.0 PROJECT DEFINITION

3.1 Evaluation of Socio-Economic Impacts

In the process of determining the appropriate response to Braiden's threat to close down and his offer to sell, the following socio-economic issues arose:

a) is Parks Canada policy with respect to campgrounds adversely affecting the private sector?
b) if question "1" is answered in the affirmative, what are the relative merits of the alternative remedies?
c) if the "best" solution is to purchase the Brayco Campground, is the asking price of 3.25 million dollars a reasonable one?

In order to answer the above-stated questions, a number of investigations were carried out.

3.1.1 Identification of variables affecting level of use of Brayco Campground and development of a visitor demand forecasting model

A SED study identified the most significant variables affecting the demand for Brayco campsites and examined whether demand for the Green Point Campground affected the demand for Brayco sites.

Using previous visitor-use studies it was assumed that two basic variables (number of ferry passengers to Vancouver Island and number of party-nights at the Green Point Campground) adequately explained the observed variations in use at the Brayco Campgrounds. It was also assumed that the park and the private campgrounds could be considered to be complementary facilities - i.e., Brayco served as an overflow facility. As well, an element of use substitution occurred because some visitors would prefer the park facilities to the Brayco facilities. The above-mentioned assumptions were used to build a mathematical forecasting model; the two basic variables used in the model were estimated using linear regression analysis; r was found to be equal to 0.96.

Using this model the SED study was able to forecast the number of party-nights at the Brayco Campground for the years 1980 to 1995 (see Table 1). This information was valuable in assessing the validity of Braiden's allegation that Parks Canada campgrounds were negatively impacting on his facility. This study showed that the potential, albeit undeveloped, capacity of the Braiden campground (capacity of 1400 sites or 98,000 camper-nights/season) was far in excess of camper demand. Study projections showed that developed sites would not be filled to capacity (i.e. 35,000 camper-nights/season) until sometime in the 1990's.

TABLE 1: PROJECTED NUMBER OF PARTY-NIGHTS
BRAYCO CAMPGROUND - PACIFIC RIM
NATIONAL PARK

Year	Number of Party-Nights					
	June to Sept.		Off-Season		Total	
	I	II	I	II	I	II
1980	19,200	22,700	400	500	19,600	23,200
1985	24,000	35,600	500	700	24,500	36,300
1990	29,000	48,000	600	1,000	29,600	49,700
1995	34,300	56,700	700	1,100	35,000	47,800

NOTES:

a Scenario I - Based on a 2 percent increase in ferry traffic.

b Scenario II - Based on a 4.8 percent increase in ferry traffic.

c Based on the assumption that the June to September period accounts for 98 percent (average of 1976 to 1977) of the campground use.

d The portion of these figures which applied to July and August were adjusted downward to ensure that campground capacity would not be exceeded.

3.1.2 Qualitative evaluation of the socio-economic impacts of identified options

Seven options were investigated. The following is a summary of the relative advantages and

TABLE 2: QUALITATIVE EVALUATION OF THE SOCIO-ECONOMIC IMPACTS OF IDENTIFIED OPTIONS

OPTION 1 Close Park Campground	OPTION 2 Equalize Price Structure	OPTION 3 Clayoquot Indian Operation	OPTION 4 Purchase/Find Concessionaire to operate	OPTION 5 Build New Campground	OPTION 6 Purchase and Sell
ADVANTAGES: - reduce camping O&M costs	ADVANTAGES: - small increase in Brayco campground	ADVANTAGES: - small business provided for Band thus helping unemployment problem (maximum of 8 to 10 jobs) - good location for housing of Band - Parks Canada would acquire a major new day use area	ADVANTAGES: - would not have to develop a new campground shculd Brayco close	ADVANTAGES: - provide opportunity for people to camp in the National Park - solves the over flow problem in that people can be accommodated (in the event that Brayco closes)	ADVANTAGES: - would not have to develop a new campground should Brayco close
DISADVANTAGES: - seriously impair enjoyment of Park - reduce overall attendance to the park - increase park interpretive costs if special programs have to be set up as a result - adverse public reaction - may in fact decrease Brayco camping due to lesser attractivity of the park	DISADVANTAGES: - as fees are uniform through the system, it would have serious policy implications - if Brayco was subsidized, it would set a precedent - doubtful it would have a satisfactory impact on Brayco's income. His problem is the lack of people due to his location and amenities not price difference	DISADVANTAGES: - the campground would operate at a loss for several years - to provide a real destination site and thus provide the social and economic benefits referred to, there would be a need to invest greater sums of money in facilities and O&M - lack of management expertise could prove to be a major obstacle - local tax loss of about $18,000	DISADVANTAGES: - Parks Canada would be providing campers with a camping experience not to Park standards - capital investment required to clean up site, install facilities - precedent setting	DISADVANTAGES: - costly in terms of captial development and O&M costs - puts Parks Canada in conflict with Brayco - it may set a precedent of bad faith with private developers across the system	DISADVANTAGES: - Parks Canada would probably take at least a $2 million loss if we could unload it - it may set system wide precedent of buying up developers mistakes and having Parks Canada absorb the loss - unlikely to find an entrepreneur to buy

disadvantages of each option. Table 2 illustrates the types of variables which were examined in evaluating the socio-economic impact of the options.

3.1.3 Forecast of overall demand for camping sites in Pacific Rim Park area

The option of building a new Park campground was evaluated in terms of: 1) cost to Parks Canada, 2) compatibility with existing Parks Canada policy and 3) future demand for camping sites.

The third variable was quantified by camper projections developed by SED.

3.1.4 Business valuation of Brayco Campground

An income valuation approach was used to determine the greatest amount that a rational investor would spend in order to receive a profit from the campground. A figure in the area of $185,000 - $215,000 was arrived at. Extrapolations from cost and revenue data available for 1976-77 for Brayco Campground were made in order to forecast net income for the years 1978 through 1998. After-tax income was calculated after adjusting for interest charges and depreciation costs. These yearly projections were discounted to present value using 3 different discount rates. These discounted present values of future after-tax earnings were summed for the period 1978-1998; these sums (each sum representing a different discount rate) represented the amount that a rational investor would spend to acquire the campground.

Using the income valuation method, if the land value were added to the calculated business value, the total value would have been $1.185 to $1.215 million.

3.1.5 Market value appraisal of Brayco lands and improvements

Accredited appraisors were contracted to determine the market value of the Brayco lands and improvements. The appraisal fixed the market value of the property and assets at $3.25 million. This compares with the $1.185-1.215 million business value.

PART 1 - DESIGN STANDARDS

1.0 GENERAL

1.1 Parking Requirements:

Vehicle Type	Area (m^2)
Passenger	29
Passenger with boat trailer	58

Source: George E. Fogg, PARK Planning Guidelines, National Recreation and Park Association, 1975, page 42.

1.2 Space Requirements Per Person:

Location	Area (m^2)
Lobby, reception area	1.11 (1)
Exhibit areas	1.86 (1)
Assembly areas (a-v programs or special presentations given)	0.84 (1)
Assembly areas:	
with fixed seats	based on number of seats(2)
with non-fixed seats	0.75 (2)
with non-fixed seats and tables	0.95 (2)
standing space	0.40 (2)

Source: (1) D.F. Benson and R.W. Baird, Designing Good Basic Visitor Centres, US National Park Service, Denver Service Centre (Denver, Colorado, 1975)

(2) National Building Code of Canada 1980, Associate Committee on the National Building Code, National Research Council of Canada, page 74, Table 3.1.14.A.

2.0 CAMPGROUND

2.1 Water Consumption for Campgrounds:

Campground Type	Litres of water/person/day required
Serviced	120-180
Semi-serviced	40-115
Primitive	15-40

Source: Campground Manual, 2.3.3 4)

NOTES:

(1) Campground Types (Campground Manual, 2.2):

- Serviced-
  - Level 1: trailer camping with water, sewer and electrical hook-ups at each site. Centralized sanitary and sewage disposal facilities.
  - Level 2: trailer camping with water and electrical hook-ups at each site. Centralized sanitary and sewage disposal facilities.
  - Level 3: trailer camping with no utility hook-ups at each site. Potable water and centralized sanitary facilities.
- Semi-serviced-
  - Level 1: tent and trailer camping with electrical hook-ups at each site. Centralized sanitary, water and sewage disposal facilities.
  - Level 2: tent and trailer camping with no utility hook-ups. Centralized sanitary, water and sewage disposal facilities.
  - Level 3: tent camping with potable water and pit/vault toilets.
- Primitive-
  - Level 1: wilderness hike-in camping with basic campsite amenities. Potable water and pit/vault toilets.
  - Level 2: wilderness hike-in camping with no basic campsite amenities. Potable water and pit/vault toilets.
- Group-
  - Level 1: group tent camping with centralized parking, eating and sanitary facilities.
  - Level 2: group tent camping with centralized parking, potable water, and pit/vault toilets.

(2) One potable water outlet should be provided for every 8-10 sites. For primitive sites, a potable water source should be available within 60 m. of the campsite. (Campground Manual, 2.3.3 4).)

(3) Emergency water storage may be estimated at double the anticipated maximum day use. (Campground Manual, 2.3.3 4).)

(4) Quantities of waste can be taken as equal to the quantities of water supplied. (Campground Manual, 2.3.3 5).)

2.2 Water Requirement for Service Buildings Only:

Building Type	Litres of water/camper/day
Level A (1)	25
Level B (2)	10
Level C (3)	go to source

(1) Serviced campground levels 1, 2, 3; semi-serviced campground levels 1, 2; group campground level 1: flush toilets, urinals, sinks (with hot and cold water).

(2) semi-serviced campground level 3; group campground level 1: vault toilets, sinks (with cold water).

(3) Primitive campground levels 1, 2; group campground level 2: privies, no fixtures, no water required.

Source: Parks Canada, Engineering and Architecture (79.3.7.1, pages 27-29).

NOTE:

(1) Distance from drinking water to most distant site should be 93 m. maximum (46.5 m. optimum). (George E. Fogg, PARK Planning Guidelines, National Recreation and Park Association, 1975, page 61.)

2.3 Fixtures Required in Service Buildings:

Parties Sites (1)	MEN					WOMEN				Total Area m^2	Extra Fixtures (2)
	w/c	urinals	basins	showers	area subtotal m^2	w/c	basins	showers	area subtotal m^2		
1-15	1	1	1	1	14.5	1	1	1	11.5	26.0	--
16-30	1	1	2	1	18.2	2	2	1	15.2	33.4	--
31-45	2	2 (3)	3	2 (3)	22.8	2	3	2 (3)	20.5	43.3	1
46-60	2	2	3	2	26.5	3	3	2	24.2	50.7	1
61-80	3	2	4	2	30.2	4	4	2	27.9	58.1	1
81-100	3	2	4	3	35.5	4	4	3	33.2	68.7	2

(1) Based on four people per site.
(2) From Campground Manual, Parks Canada, IANA, 1977, 2.3.3 5).
(3) Campground Manual only requires 1.

Source: Parks Canada, Engineering and Architecture (79.3.7.1, pages 7-8).

NOTES:

(1) Breakdown of area required (including circulation space):
1 w/c with basin - 3.7 m^2
1 w/c with basin, handicapped - 5.5 m^2
1 urinal - 3.0 m^2
1 shower and dressing area - 5.3 m^2
1 shower and dressing area, handicapped - 6.0 m^2

Area requirements given above allow for 1 w/c and shower for the handicapped regardless of the number of fixtures provided. (E&A 79.3.7.1, pages 7-8.)

(2) The National Building Code of Canada 1980 specifies that:
- 3.6.4 (2) - 2/3 of the w/c can be urinals. If there are only 2 w/c, then there can be only 1 urinal.
- 3.6.4 (3) - there must be at least 1 basin per washroom with 1-2 w/c, and 1 additional basin for every 2 additional fixtures.
- 3.2.7.3 - if there are 2 w/c, at least 1 must be designed for the physically handicapped.

PART 2 - REFERENCE CENTRES

1.0 Reference Centres

1.1 Tourism Reference and Data Centre
Canadian Government Office of Tourism
3rd Floor West
235 Queen Street
Ottawa, Ontario
(613) 995-2754

1.2 Departmental Library
Environment Canada
Chaudière Branch
Les Terrasses de la Chaudière
10 Wellington Street,
Hull, Québec
(819) 997-7434

1.3 Parks Canada
Atlantic Region Library
Historic Properties
Upper Water Street
Halifax, Nova Scotia
(902) 426-7266

1.4 Parks Canada
Western Regional Office
Room 520 Library
Station "M"
Calgary, Alberta
T2P 3H8
(403) 231-4455

1.5 Parks Canada
Prairie Regional Office
391 York Avenue
Winnipeg, Manitoba
R3C 4B7
Attn. Library
(204) 949-2912

1.6 Parks Canada
Ontario Region Library
132 Second Street East
P.O. Box 1359
Cornwall, Ontario
K6H 5V4
(613) 933-7951 Ext 303

As of June 1984:
Parks Canada
Ontario Region Library
111 Water Street East
P.O. Box 1359
Cornwall, Ontario
K6H 5V4
(613) 993-7951 Ext 303

1.7 Parks Canada
Québec Region Library
3 Buade Street
P.O. Box 6060
Québec City (Québec)
G1V 4V7
(418) 694-7750

1.8 National Park Branch Documentation Centre
2nd Floor
Les Terrasses de la Chaudière
10 Wellington Street
Hull, Québec
(819) 994-2844

1.9 Program Management
Parks Canada
Environment Canada
Ottawa, Ontario
K1A 1G2
(Mailing Address)

Program Management
Parks Canada
Room 313, 3rd Floor
North Tower
Les Terrasses de la Chaudière
10 Wellington Street
Hull, Québec
(819) 994-2000

1.10 Parks Canada
ARC Documentation Centre
4th Floor
Les Terrasses de la Chaudière
10 Wellington Street
Hull, Québec
K1A 1G2
(819) 994-2911

1.11 National Museums Library
2086 Walkley Road
Ottawa, Ontario
K1A 0M8
(613) 998-3923

1.12 Canadian Museums Association
280 Metcalfe Street, Suite 202
Ottawa, Ontario
K2P 1R7
(613) 233-5653

1.13 Sport Information Resource Centre
333 River Road
Ottawa, Ontario
K1L 8H9
(613) 746-5357

1.14 Centre for Leisure Studies
Acadia University
Wolfville, Nova Scotia
B0P 1X0

1.15 National Museums of Canada
Main Library
2086 Walkley Road
Ottawa, Ontario
K1A 0M8
(613) 746-5357

1.16 Canadian Conservation Institute
Library
1030 Innes Road
Ottawa, Ontario
K1A 0M8
(613) 998-3721

1.17 Canadian War Museum
Libary
330 Sussex Drive
Ottawa, Ontario
K1A 0M8
(613) 996-4708

1.18 National Museum of Science and Technology
Library
2380 Lancaster Road
Ottawa, Ontario
K1A 0M8
(613) 998-4566 Ext. 276

PART 3 - SECONDARY DATA SOURCES

The following provides a listing of many sources of secondary data, although it is not intended as an inclusive listing.

1.0 Statistics Canada

1.1 87-002 Canadian Travel Survey - Canadians Travelling in Canada
Quarterly (first: June 1978)
- Data in terms of trips, person-trips and person-nights for the Canadian population travelling in Canada. These terms are considered in relation to the origin and destination of the trip, primary and secondary modes of transportation used, purpose of the trips, accommodation utilized, and distance travelled from home. First 2 editions contain no expenditure data, while subsequent editions will include this variable. (see also 87-504)

1.2 87-504 Canadian Travel Survey 1979 and 1980
Occasional
- Comparative data, charts, and maps on the trips and socio-economic characteristics of Canadians travelling in 8 consecutive quarters. Volume of travel expenditures, purpose of trip, means of transportation, type of overnight accommodation, trip distance, origin, and destination.

1.3 66-001 Travel Between Canada and other Countries
Quarterly (first: 1931)
- Non-residents entering Canada and Canadians returning from abroad. Canada-US shows vehicles and persons, and mode of transportation. Data are disaggregated by province and port. Quarterly estimates of receipts and payments on international travel presented.

1.4 66-002 International Travel Advance Information Monthly (first: 1948)
- Summary of numbers of travellers between Canada and other countries and selected categories of non-residents (mainly 1 or more nights traffic) by province of entry. Preliminary to publication 66-001.

1.5 66-201 Travel Between Canada and Other Countries
Annual (first: 1920)
- Non-resident travel in Canada and Canadian travel abroad is analysed by country of residence, expenditures, length of stay, type of transportation, purpose of trip, accommodation used, and destinations.

1.6 51-003 International Air Charter Statistics
Quarterly (first: August 1972)
- Reports on the activities of approximately 750 domestic and foreign air carriers operating in Canada. Information on passengers, miles and hours flown, goods and mail carried and financial data on the revenue, expenses, and income derived from the operations of those carriers.

1.7 51-204 Air Passenger Origin and Destination
Domestic Report Annual (first: 1968)
- Statistics on the volume of domestic air passenger traffic generated at Canadian cities and carried between pairs of Canadian points. Data may be used to indicate the relative community of interest between Canadian cities.

1.8 51-205 Air Passenger Origin and Destination Canada, United States Report
Annual (first: 1968)
- Integrated set of Canadian/US passenger origin-destination statistics. The result of an agreement to exchange data from Canada and the Civil Aeronautics Board, US. Data may be used to indicate the relative community of interest between points in Canada and the United States.

1.9 51-207 International Air Charter Statistics
Annual (first: 1974)
- Review of all air charter operations between Canada and other countries performed by both Canadian and foreign airlines.

1.10 87-502 Culture Statistics. Travel to Work, 1973-77
Occasional
- Summary statistics and analysis from 5 consecutive fall surveys give information on method of transportation, distance and time to work, size of automobile driven to work and socio-economic characteristics of commuters, with much of the data presented by province and for ten selected census metropolitan areas.

1.11 87-503 Travel to Work, 1976-80
(changed from 87-502)
Occasional
- Summarizes statistics and provides analysis from 5 consecutive fall surveys on method of transportation, distance and time to work, size of automobile driven to work and socio-economic characteristics of commuters. Data presented at provincial and Census Metropolitan Area levels. Supercedes 87-502.

1.12 87-003 Travel-Log.
Service Bulletin (first: June 1982)
- Statistical bulletin providing a medium for the release of advance and timely information on travel, tourism, and recreation in Canada and provinces. Data on domestic travel, recreation equipment ownership, travel to work, and the back page presents the National Tourism Indicators which includes the Travel Price Index.

1.13 63-011 Restaurant, Caterer and Tavern Statistics
Monthly (first: June 1967)
- Establishes restaurant, caterer, and tavern statistics for Canada and the provinces, by chains and independents, and by kind of business. Also includes revised figures for the previous month and cumulative-to-date estimates for chains and independents.

1.14 63-204 Traveller Accommodation Statistics
Annual (first: 1949)
- Statistics on hotels, motels, tourist camping grounds and other types of traveller accommodation (eg. receipts, employment, expenses, occupancy).

1.15 87-501 Recreation Activities, 1976
Occasional

- Summary statistics on participation in selected sport, exercise, favorite sport, and other leisure activities. Data are presented by area of residence of respondents, and by socio-economic characteristics of respondents.

1.16 87-001 Culture Statistics Service Bulletin
Occasional (1981: 10 issues; 1982: 8 issues; 1983: 3 issues to date)

- Statistical bulletin providing medium for release of advance and timely information on culture in Canada and the provinces. Includes data on book publishing, media, libraries, museums, artists, Canadian cultural life, and other related subjects. Previously published under 81-001

1.17 87-401 Travel, Tourism and Outdoor Recreation, A Statistical Digest
Biennial (first: 1978 and 1979)

- Tables, charts, text on domestic travel, travel to work, international travel, recreation and tourism. Examines impact of travel and recreation as well as factors influencing them. Formerly 66-202.

2.0 Tourism Canada - CGOT

Monthly

- Published for the Canadian tourism industry by Tourism Canada, and contains national, general information on the tourism industry.

2.1 Print Measurement Bureau Survey 1982: Leisure Activities/Products. (PMB III)

Annual

- The survey consists of 12,000 interviews conducted over a 24 month period by Canadian Facts Ltd.
  - 1983: media patterns
  - 1984: products and services used by Canadians, including vacation and business travel, leisure activities, and leisure products owned.
  - A profile of visitors to Canadian provinces and the Territories, broken down by province and the Northwest and Yukon Territories. The following tables are presented for each province and the Territories:

    (A) Activity Orientation - A list of sports participated in, at least 2-3 times per month, by the percentage of all Canadians participating in the listed sports, the percentage of Canadians who vacationed in the province in the prior 3-4 year period, and the Index (i.e. typical tendency of Canadians 12 years of age and older who vacationed in that province compared to the typical tendency of all Canadians 12 years of age and older).

    (B) Attendance Orientation - spectator sports attended by the same categories as in (A) above.

    (C) Ownership Orientation - possessions in prior 12 month period by the same categories as in (A) above.

    (D) Agreement/Disagreement With Statements - by the same categories as in (A) above.

2.2 Canadian Travel Survey

Quarterly - Statistics Canada 87-504

- Selected characteristics of person-trips and household-trips of Canadian residents with destinations in Canada by province of destination. Characteristics include age, sex, province or origin, mode of transportation, trip purpose and party size.

3.0 Parks Canada Park Use Statistics

Annual. Based on fiscal year (April 1 to March 31) since 1976-77. Published by SED, Parks Canada.

Information is provided by region, NHPS first, followed by the National Parks.

The text provides a profile of National Historic Parks and Sites including the location, a brief description, area, facilities and services offered, the interpretation theme, and an attendance table.

For National Parks the area is given as well as the year established, the objective/purpose of park establishment, location, a list of roads within the park, description of special features of the park, and an attendance table.

NHPS - Data presented on attendance by year and by month to each historic park and site, as well as the annual total and the percentage variation from the previous year.

NP - Data is presented on attendance, the volume of traffic entering each park by gate, campground occupancy and group campground use, facilities/services use, and a fiscal year summary of interpretation and extension contacts. Most tables present data by year, by month, and provide the annual totals and percentage variation from the previous year. All use data is also broken down into weekday and weekend use. Campground occupancy tables give the total number of nights the campground was open, the number of nights at 90% occupancy, and the average number of person-nights.

PART 4 - SURVEYS

This section provides a listing of studies and surveys conducted throughout Canadas in National Parks, National Historic Parks and Sites, and Canals. Some past surveys were excellent with respect to meeting their objectives, as well as in their preparation. Others have only provided adequate information. It is recommended that for future surveys, parks and regions seek whatever expertise is required in order to guarantee success.

1.0 Park Visitor Surveys

1.1 Atlantic Region

(a) Nova Scotia

Cape Breton Highlands National Park
1962, 1978, 1983

Fortress of Louisbourg
1977

Halifax Citadel
1976

Kejimkujik National Park
1973, 1982

Prince of Wales
1977

York Redoubt
1969

(b) New Brunswick

Fundy National Park
1972, 1977, 1982

Kouchibouguac National Park
1973, 1976, 1981

(c) Prince Edward Island

Prince Edward Island National Park
1961, 1962, 1980

Province House
1977

(d) Newfoundland

Cape Spear
1978

Gros Morne National Park
1977, 1981

L'Anse aux Meadows
1980

Terra Nova National Park
1973

1.2 Québec Region

Bataille de Chateauguay
1980

Canal de Carillon
1976, 1977, 1978

Canal de Chambly
1976, 1977

Canal de Lachine
1978, 1982

Canal de Saint-Ours
1976, 1977

Canal de Sainte-Anne-de-Bellevue
1978

Cartier Brêbeuf
1982, 1983

Coteau-du-Lac
1981

Les Forges du Saint-Maurice
1977, 1983

Forillon National Park
1976, 1977, 1982

Fort Chambly
1976, 1977

Fort Lennox
1976, 1977, 1981

Fort Temiscamingue
1980

La Mauricie National Park
1972, 1973, 1976, 1977, 1981

Parc de L'Artillerie
1977

Vieux Port de Québec
1978

Voie Maritime du Saint-Laurent
1976, 1977

1.3 Ontario Region

Fort Malden
1969, 1975

Fort St. Joseph
1984(e)

Fort Wellington
1966, 1982

Georgian Bay Islands National Park
1978

Point Pelee National Park
1973, 1985(e)

St. Lawrence Islands National Park
1966, 1973, 1980, 1981, 1982

Sault Canal
1984(e)

Trent-Severn Waterway
1978, 1982

1.4 Prairie Region

(a) Manitoba

Lower Fort Garry
1967, 1977

Riding Mountain National Park
1967, 1969, 1968-69, 1973

(b) Saskatchewan

Batoche
1976

Fort Walsh
1978

Prince Albert National Park
1967, 1968-69, 1970

(c) Northwest Territories

Auyuittuq National Park Reserve
1982

Nahanni National Park
1973, 1975, 1982

1.5 Western Region

(a) Alberta

Banff National Park
1972

Columbia Icefields
1976

Elk Island National Park
1967, 1968-69

Jasper National Park
1966, 1972

Waterton Lakes National Park
1961, 1966, 1968-69, 1971

(b) British Columbia

Glacier National Park
1968-69

Kootenay National Park
1972

Mount Revelstoke National Park
1968-69

Pacific Coast National Park
1967

Pacific Rim National Park
1972

Yoho National Park
1972

2.0 Other Visitor Surveys

2.1 Area Surveys

Banff National Park
- Tunnel Mountain (visitor destination)
  1968
- Lake Louise Study
  1968
- Fiddle River (visitor demand study)
  1977

Glacier National Park (trail use)
1971

Jasper National Park
- Mount Edith Cavell (visitor use)
  1978
- Townsite (visitor use)
  1977

Kejimkujik National Park (wilderness users)
1974, 1980

La Mauricie National Park
- Sentier des cascades (observe visitors)
  1983

Pukaskwa National Park (wilderness users)
  1983

Rideau Waterway (visitor use)
  Jones Falls, Newboro, and Merrickville
    1977

Riding Mountain National Park (back country use)
  1977, 1983

Waterton Lakes National Park (back country use)
  1974, 1977

2.2 Site/Facility Surveys

Banff National Park
  Bow Valley Media Evaluation
    1981
  Bow Valley Parkway
    1982
  Lake Louise (ski area)
    1971
  Tunnel Mountain and Two Jack Lake (camper survey)
    1964

Banff and Yoho National Parks (trail use)
  1967

Cape Breton Highlands National Park (campground use)
  1974

Columbia Icefields (VRC)
  1983

Elk Island National Park (visitor facility use)
  1975

Georgian Bay Islands National Park (campground use)
  1969-72, 1975(snowmobile use)

Glacier National Park (highcountry recreation)
  1971

Jasper National Park (trail use)
1978

La Mauricie National Park (evaluation of information
1983 and interpretation centre)

Mountain Park Trail Use
1967

Peterborough Lift Lock and Big Chute (visitor loading)
1981

Riding Mountain National Park (facility use)
1972

2.3 User Surveys

Banff National Park
Lake Louise (summer visitors)
1978

Fundy National Park (overnight users)
1970

Rideau Waterway (day user sites)
1970

Riding Mountain National Park (winter users)
1976-77

Trent-Severn Waterway (day users)
1970

Yoho National Park (summer users - Lake O'Hara)
1972

2.4 Program/Service Use Surveys

Halifax Citadel (evaluation of interpretation)
1983

La Mauricie National Park (evaluation of interpretation)
1983

Louis-S. St-Laurent (evaluation of interpretation)
1983

Kootenay National Park (response to evening interpretation program)
1969

2.5 Special Purpose

A Visitor Use Study and Attendance Forecast 1975-2000 for Fort St. Joseph
1975

A Yukon Residents Outdoor Recreation Survey
1977

Campground Studies, 1973 Alberta Reports, Vol. 3
1973

Carleton Martello Tower National Historic Park 1976 Licence Plate Survey
1976

Climbing and Skiing In Glacier National Park, BC: A Survey of High Country Recreation Patterns and Problems
1971

Demand Study: Mountain Parks User Survey
1968

Golf Course Survey, Western Region
1962

Planning Implications for Kluane National Park and the Dawson City Historic Sites: An Analysis of the 1975 Yukon Exit Survey
1975

Prince Edward Island National Park Traffic Studies,
1961-1964

1963 Public Land Use Survey: Terra Nova National Park
1963

Riding Mountain National Park Visitor Pattern Survey
1967

Survey of Visitor Preferences Regarding Forest Habitat in Some Mountain Parks of BC and Alta.
1967

2.6 General

Park-use Survey
1960

Park-use Survey, Special Report 61-3
1960

3.0 Traffic Surveys

Each region conducts traffic surveys on an as required basis. Information on the type and location of surveys which have been conducted can be obtained from the Regional Traffic Engineer, Engineering and Architecture, or the socio-economic section. These include traffic counts, intersection counts, and parking lot counts.

PART 5 - PROVINCIAL PARK USE STATISTICS

1.0 Provincial Park Use Statistics

SOURCES OF INFORMATION (See section 1.2 for full listing.)	VISITS/ TRIPS				LENGTH OF STAY				EQUIP. USED		ACCOMMODATION				FACILITIES								ORIGIN
(1) B.C.	X										X	X						X					
(2) Alta.	X	X	X		X	X	X		X		X		X										
(3) Sask.	X	X																					X
(4) Sask.	X		X						X		X	X			X	X	X	X	X	X			X
(5) Man.	X								X		X	X	X			X	X	X		X			X
(6) Ont.		X	X			X					X		X										
(7) Qué.		X				X							X		X		X		X		X		
(8) N.B.	X	X				X	X				X		X		X		X		X				X
(9) N.S.	X	X				X			X		X		X										X
(10) Nfld.		X							X		X		X					X					X

1.2 Listing of Sources

(1) Park Data Handbook 1982, Province of British Columbia, Ministry of Lands, Parks and Housing.

(2) User Statistics, Alberta Provincial Parks, 1982, Alberta Recreation and Parks.

(3) Tourism Data Book 1978, Saskatchewan Tourism and Renewable Resources.

(4) 1981 Visitation and Outdoor Recreation Statistical Report, Saskatchewan Tourism and Renewable Resources.

(5) Manitoba Park Statistics 1982, Department of Natural Resources.

(6) Statistics 1982, Ontario Provincial Parks.

(7) Rapport Annuel 1976-77, Ministère du Tourisme, Chasse et Pêche.

(8) 1981 Statistical Report, New Brunswick Provincial Parks.

(9) Campground Use 1980, Nova Scotia Provincial Parks.

(10) Statistics 1982, Newfoundland and Labrador Provincial Parks

PART 6 - DEFINITIONS

1.0 BENEFIT-COST ANALYSIS

Benefit-cost analysis is a method used to evaluate public investment project alternatives. It is used to choose the most efficient allocation of budgetary resources. A project is considered to involve an efficient allocation of government resources and should be undertaken, if the net present value of its allocative benefits exceed its allocative costs. (If only one project is being examined, the benefit-cost ratio must be greater than 1 for efficiency considerations.) The value of the resources required for the project in their best alternative use in the private sector is used as the basis of comparison.

Benefit-cost analysis is used to study the net effect of major resource allocation decisions on the economy (i.e. that more goods and services are produced by the project than are used by it). Major new initiatives, such as the establishment of new parks, and multi-million dollar projects requiring Treasury Board submissions, require a benefit-cost analysis. However, benefit-cost analysis is not concerned with the distribution of benefits or costs, that is to say who gains or loses from the project, nor with regional multiplier effects, such as estimates of the extra jobs and income generated by the project.

1.1 Benefits and Costs

Benefits and costs represent the opportunities for production and consumption that are gained or foregone as the result of public expenditures. Benefits include either the value of additional goods and services provided, increased productivity, time or cost savings. Benefits can be stated in either monetary or non-monetary units. Costs are estimated from the value of consumption and investment opportunities foregone as the result of higher taxes or government spending. That is to say, costs are based on the highest and best alternative use in the private sector of the resources required.

1.2 Net Present Value

The net present value of a project is equal to the present value of the monetarily stated benefits minus the present value of the costs. For a project to go ahead the net present value must be positive. For a decision amongst several options, the aim is to maximize net present value.

1.3 Benefit Cost Ratio

The benefit cost ratio is the ratio of the present value of benefits to the present value of costs of a project. For a project to proceed, this ratio must be greater than 1.

1.4 Internal Rate of Return

The rate of interest which is equal to the present value of the benefits less the costs. In order to calculate the true or effective yield on a project the analyst must take into account the timing of all cash inflows and outflows from the initial investment to the final depreciation of the asset. This criteria is more frequently used for evaluating private sector investments.

1.5 Discounting

A method used to estimate future costs and benefits of a project in terms of its present value equivalent. The discount rate is the rate of return that the funds would earn if they were to remain in alternative uses in the private sector, rather be used in the project. Through discounting the actual cost of the money used in an investment is taken into account. This includes not only an allowance for inflation, the declining purchasing power of the funds, but also a net amount that could have been earned if the funds has been invested elsewhere. The current discount rate is available from SEB and the present value of money is found by consulting appropriate standard tables.

1.6 Sensitivity Analysis

Sensitivity analysis is the method used to test the effect of changes in key variables or assumptions, such as the discount rate on potential recommendations. This type of analysis is particularly important if the choice of an alternative is not clear, or if the estimates of project costs and benefits rest on broad assumptions and/or informed estimates which may prove unreliable.

2.0 COST-EFFECTIVENESS ANALYSIS

Cost-effectiveness analysis is the method used to evaluate project planning options. It is used to choose the option which will minimize the cost of obtaining a given objective.

Cost-effectiveness analysis is used where there are options for controlling or limiting costs. For example, do future cost savings justify current expenditures on energy conservation measures? It is not concerned with whether or not the objective itself is worthwhile.

3.0 SOCIO-ECONOMIC IMPACT ASSESSMENT

Socio-economic impact assessment is the process by which the social and economic effects of a project on residents, businesses and communities within a defined geographical area are screened and evaluated. The first stage of the process is the initial screening of the project to identify significant adverse effects in excess of those created by existing activities or uses of the affected area. Where the project has significant adverse social and economic impacts, the sponsor must identify (and cost) the required mitigating measures as part of the project plan. If existing information is inadequate for project planning purposes and the sponsor is able to identify potentially significant adverse effects, further studies or evaluation may be required in order to identify and cost the necessary mitigating measures.

4.0 ECONOMIC IMPACT ANALYSIS

Economic impact analysis is the method used to evaluate the contribution of project expenditures to local income, job creation, business and investment opportunities. When setting its budgetary priorities, the Government often requires some basis for comparing either the short run or regional economic impact of major competing funding proposals.

Where the projects being considered have a negligible impact ouside the immediately affected areas of the economy, regional economic multipliers may be calculated. Where these projects have a major impact on prices, output, productivity or market structure, input-output analysis should be used.

Local economic impacts can be defined as the net secondary benefits accruing to the immediate region from the redistribution and multiplier effects of project and user expenditures. Distributive effects include interregional transfers of the public funds and tourism revenues. Multiplier effects include extra production of goods and services, income, profit, employment, and tax revenues generated as spinoffs of the project.

Project expenditures have a direct, indirect and induced impact on the Canadian economy. The direct economic effect is the result of increased demands for goods and services resulting initially from proposed project expenditures and expected user expenditures in the area. This initial increase in demand results in additional private sector business opportunities, as suppliers also step-up production to meet demands generated in other industrial sectors. Part of the additional business revenues resulting from the direct and indirect effects of project and visitor expenditures is paid out in the form of profit and income. This in turn will generate an additional round of consumer expenditures, an induced effect, which will create additional jobs and income.

5.0 VISITOR MARKET ANALYSIS

A visitor market analysis is undertaken to identify park user groups, or publics, with similar characteristics, park use objectives and interests, who are likely to be served by the project. Marketing is the task of managing the level, timing and character of user demand. In order to ensure that a project is not underused or experiences overcapacity during its useful life span, potential changes in the size and composition of visitor market demand must be forecast in order to choose an economic design capacity. Where specific design requirements such as siting, layout, the final dimensions, and potential loadings are determined from expected visitor use, detailed user projections may also be needed.

6.0 INITIAL YEAR

The year in which a facility is to be initially occupied or fully operational.

7.0 DESIGN YEAR

The year in which the predicted design capacity requirement is expected to be reached.

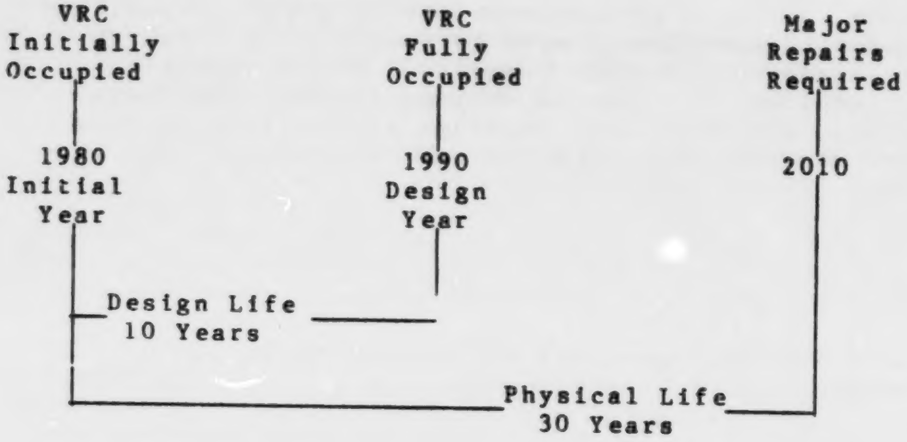
8.0 DESIGN LIFE

The time span from the initial year to the design year.

9.0 PHYSICAL LIFE

The time span from the initial year to the year in which a facility can no longer operate without major repairs or replacement.

Example - A VRC to be built and open for public use in 1980 has a forecasted capacity of 500 persons in 1990. It is expected to need major repairs by 2010. Therefore, the following situation can be portrayed.


VRC Initially Occupied
1980 Initial Year
VRC Fully Occupied
1990 Design Year
Major Repairs Required
2010
Design Life 10 Years
Physical Life 30 Years

PART 7 - DESIGN LIFE/PHYSICAL LIFE

(EA-HQ-79-48)

GROUNDS	DESIGN LIFE	PHYSICAL LIFE
1. RECREATIONAL		
A) Campground		
a) serviced	10	25
b) semi-serviced	10	30
c) primitive	15	35
d) group	15	20
B) Picnic Area		
a) individual	10	25
b) combination	10	20
c) group	10	20
C) Trail		
a) wilderness	10	20
b) back country	10	20
c) front country	5	10
d) day-use	5	10
e) urban-oriented	10	20
f) interpretive	10	20
g) cross country	20	30
h) equestrian	5	10
i) bicycle	10	20
D) Beach Area		
a) high density	15	35
b) medium density	15	30
c) low density	20	50
E) Boating Area		
a) motorized (marina)	10	
b) non-motorized (landing only)	15	35
F) Track and Field/Sports Area		
a) track	10	20
b) field	15	35
c) play courts (tennis, etc.)	10	20
G) Playground Area		
a) with full range of play equipment	10	20
b) with minimal play equipment	15	35
H) Golf Course	10	35

GROUNDS	DESIGN LIFE	PHYSICAL LIFE
1. RECREATIONAL (cont'd)		
I) Outdoor Swimming Pool	10	25
J) Ski Area		
a) with full range of lifts	15	25
b) with t-bar only	20	30
K) Interpretive (natural)		
a) view points (look outs)	10	30
b) grounds associated with interpretive centres	life of facility	
c) amphitheatres	10	20
L) Interpretive (historic)		
a) period gardens	life of facility	
b) grounds associated with historic buildings/sites	life of facility	
2. OPERATIONAL		
A) Registration/Reception Area		
a) landscaping	life of facility	
B) Maintenance Area		
a) landscaping	life of facility	
C) Storage Area		
a) landscaping	life of facility	
D) Commercial Area		
a) landscaping	life of facility	
E) Industrial Area		
a) landscaping	life of facility	
F) Service Area		
a) landscaping	life of facility	

GROUNDS	DESIGN LIFE	PHYSICAL LIFE
G) Others		
a) wildlife management areas	N/A	N/A
b) agriculture areas	N/A	N/A

PART 8 - REFERENCES AND RELATED AUTHORITIES

(EA-HQ-79-48)

1.0 SCOPE: PROGRAM WIDE APPLICATION

The scope of the following references and related authorities (text follows) is program wide. The purpose for both these directives and their inclusion in this USER GUIDE is to better enable Parks Canada to achieve its proposed capital plan within declared Program priorities.

2.0 PARKS CANADA DIRECTIVE 2.2.2 - "Socio-Economic Analysis and Impact Assessment in Program Planning"

PARKS CANADA DIRECTIVE 2.2.2

SOCIO-ECONOMIC ANALYSIS AND IMPACT ASSESSMENT IN PROJECT PLANNING

AUGUST 1983

FILE: C-1425-105

CONTACT: SOCIO-ECONOMIC BRANCH

PURPOSE

To ensure that the requirements for socio-economic analysis and impact assessment are considered in project planning.

REFERENCES AND RELATED AUTHORITIES

- Parks Canada Policy
  - 1.2 (Impact assessment and review)
  - 1.5 (Research)
  - 2.4 (Facilities and Services)
  - 3.3 (Regional Integration)
- Treasury Board Administrative Policy Manuals and Circulars
  - Chapter 145 (Management of Projects)
  - The Policy Expenditure Management System (PEMS)
  - TB 1983-25 (Approval of Capital Projects)
- Administrative Directives
  - 1.2.3 (Research review process)
- Management Directives
  - 2.2.1 (Socio-economic analysis in management plans for national parks)
  - 2.4.2 (Environmental assessment and review process in Parks Canada)

DIRECTIVE DE PARCS CANADA 2.2.2

ANALYSE SOCIO-ÉCONOMIQUE ET ÉVALUATION DE L'IMPACT SOCIO-ÉCONOMIQUE LORS DE LA PLANIFICATION DES PROJETS

AOÛT 1983

DOSSIER: C-1425-105

CONTACT: DIRECTION SOCIO-ÉCONOMIQUE

BUT

Veiller à ce qu'on tienne compte, dans la planification des projets, des exigences relatives à l'analyse socio-économique et à l'évaluation de l'impact socio-économique.

RÉFÉRENCES ET AUTORISATIONS CONNEXES

- Politique de Parcs Canada
  - 1.2 (Évaluation et examen de l'impact)
  - 1.5 (Recherche)
  - 2.4 (Installations et services)
  - 3.3 (Intégration régionale)
- Manuels et circulaires de politique administrative du Conseil du Trésor
  - Chapitre 145 (Gestion des projets)
  - Le système de gestion des politiques et des dépenses (SGPD)
  - CT 1983-25 (Autorisation des projets d'investissement)
- Directives administratives
  - 1.2.3 (Modalités de l'examen de la recherche)
- Directives de gestion
  - 2.2.1 (Analyse socio-économique dans les plans de gestion des parcs nationaux)
  - 2.4.2 (Processus d'évaluation en matière d'environnement de Parcs Canada)

Technical Manuals
Engineering and Architecture
Misc. Publications (Contracts and Capital Program)
42.6 (Guidelines for the preparation of project and design briefs)
Program Planning and Analysis Directorate
Project Implementation and Planning System (PIPS)

DEFINITIONS

Project Proposal: a plan of action to purchase, develop, operate or maintain land, facilities or services.

Socio-economic analysis: the identification and description of the effects of social and economic factors on project design requirements and resource allocation. It may involve the following tasks:

a) forecasts of external social and economic trends affecting the realisation of project objectives (eg. recreational participation rates, equipment usage, tourism trends, local traffic pull-offs);

b) estimates of the size and characteristics of user groups (eg. identification of the potential audience for a particular media);

c) estimates or projections of usage affecting the choice of design factors for project components (such as the amount of floor space, parking lot size, the capacity of water services and the number of

Guides techniques
Direction du génie et de l'architecture
Diverses publications (Contrats et programme d'investissement)
42.6 (Lignes directrices sur la façon d'établir l'énoncé de projet et le résumé des conceptions)
Direction de la planification et analyse du programme
Système de mise en oeuvre et planification de projets (MOPP)

DÉFINITIONS

Proposition de projet: un plan d'action permettant d'acheter, de développer, d'exploiter ou d'entretenir des terrains, des installations ou des services.

Analyse socio-économique: la détermination et la description des effets qu'exercent les facteurs économiques et sociaux sur la conception d'un projet et sur l'affectation des ressources. L'analyse peut comprendre les tâches suivantes:

a) prévoir les tendances sociales et économiques extérieures influant sur la réalisation des objectifs du projet (par exemple, le taux de participation aux loisirs, l'utilisation de l'infrastructure, les tendances en matière de tourisme, l'achalandage dû à la circulation locale);

b) estimer l'importance et les caractéristiques des groupes d'usagers (par exemple, déterminer le public éventuel d'un certain média);

c) estimer ou projeter le type d'utilisation influant sur le choix des facteurs relatifs à la conception des composantes du projet (par exemple la superficie des planchers, la grandeur du parc de stationnement, la capacité des services d'aqueduc et le fixtures required for a VRC);

d) evaluation of different project options meeting similar functional requirements during a specified period of use (i.e. life cycle) such as the cost per contact of different interpretive media, the lowest cost-in-use, the potential for revenue recovery...

Socio-economic impact assessment: the screening and evaluation of the social and economic effects of a project on residents, businesses and communities within a defined geographical area. These effects include:

a) public opinion (eg. acceptability to local residents);

b) any disruption, dislocation or displacement (eg. lost retail business, income, employment or housing), either permanent or temporary, during the construction and operating phases of the project;

c) the extent to which existing community infrastructure (eg. local housing, roads, services and utilities) can handle the additional burden placed on it during each phase of the project;

d) any changes in the local cost of living, property values, or tax base;

e) the project's compatibility with either existing or planned local developments (eg. usage of existing public recreational

nombre d'installations électriques requises pour un centre d'accueil des visiteurs);

d) évaluer les diverses options possibles, compte tenu des mêmes exigences de base, pour une période d'utilisation donnée (i.e. le cycle chronologique) comme le coût par contact de divers média d'interprétation, le coût d'exploitation le plus bas, la récupération potentielle de revenus...

Évaluation de l'impact socio-économique: un examen et une évaluation des effets sociaux et économiques d'un projet sur les habitants, les entreprises et les collectivités d'une région géographique donnée. Ces effets comprennent:

a) l'opinion publique (par exemple, l'acceptabilité pour les habitants locaux);

b) toute perturbation, tout dérangement ou tout déplacement (par exemple, la perte d'affaires au détail, de revenus, d'emplois ou de logements), permanents ou temporaires, au cours des phases de construction et d'exploitation du projet;

c) la mesure dans laquelle l'infrastructure actuelle de la collectivité (par exemple, les logements, les routes, les services et les services d'utilité publique locaux) peut tolérer le fardeau supplémentaire exigé d'elle pendant chaque phase du projet;

d) toute modification du coût de la vie locale, des valeurs immobilières ou de l'assiette fiscale;

e) la compatibilité du projet avec les développements existants ou projetés au niveau local (par exemple, l'utilisation des commodités récréaamenities, direct competition with private sector tourist accommodation and services, proposed construction activity or investment);

f) the direct and indirect contribution of each phase of the project to the local economy (eg. the employment, wages and salaries, and purchases generated by the project itself; the additional jobs and income created through project, employee, and visitor expenditures).

Major effects: Social and economic effects are major considerations:

a) where the scale, operating capacity or appropriateness of project design requirements are determined from expected visitor use;

b) where the project has significant adverse social and economic impacts which may require that mitigating measures be identified and/or costed as part of the project plan;

c) where the rationale for the project includes the potential economic benefits generated (such as job and income creation);

d) where the project provides substantial support for other federal government social and economic development policies.

Functional advice and guidance: the authority and responsibility to guide and advise line management and its subordinate staff within a prescribed area of specialized support.

tives publiques déjà existantes, la concurrence directe avec le secteur privé fournissant hébergement et services touristiques, les projets de construction ou d'investissement);

f) la contribution directe et indirecte de chaque phase du projet à l'économie locale (par exemple, les emplois, les salaires et traitements et les achats engendrés par le projet lui-même; les emplois et les revenus additionnels occasionnés par les dépenses affectées au projet, les dépenses des employés et des visiteurs).

Effets majeurs: les effets sociaux et économiques représentent des considérations majeures:

a) lorsque la taille des exigences relatives à la conception du projet, leur capacité de fonctionnement et leur adaptation à leur fin est déterminée à partir de la fréquentation attendue des lieux;

b) lorsque le projet renferme d'importants impacts défavorables au point de vue social et économique qui pourraient nécessiter l'identification de mesures atténuantes et/ou de leur coût en tant que partie intégrante du plan de projet;

c) lorsque la justification du projet comprend les bénéfices économiques qui pourraient être générés (comme la création de revenus et d'emplois);

d) lorsque le projet procure un support substantiel à d'autres politiques de développement social et économique du gouvernement fédéral.

Conseils et orientation fonctionnels: l'autorité et la responsabilité de guider et de conseiller les gestionnaires hiérarchiques et leurs subordonnés à l'intérieur d'un certain domaine de soutien spécialisé.

BACKGROUND

This directive addresses several problems in the socio-economic analysis of project requirements and impacts in project planning.

First there is a need to identify when socio-economic effects are major considerations in the project planning process. Within the Parks Canada program, project expenditures are frequently directed towards the provision of public facilities and services.

Socio-economic factors must be considered in the initial review and selection of project options. For sound investment decision-making, the proposed scale or operating capacity, and appropriateness of project requirements must be supported by an analysis of expected visitor use. In some cases requirements may depend on assumptions about future trends in usage or demand, while in other cases the achievement of project objectives may depend on external social and economic conditions beyond the program's control. Any support for other federal social and economic development policies or adverse local impact of a substantial nature must be identified. Less frequently, estimates of the probable economic benefits and other spinoffs will be requested.

Second, although park management and area (or unit) plans may include specific projects, concept approval often answers only the question of what is to be built and not the questions of when, where or to what scale or capacity.

ÉTAT DE LA QUESTION

La présente directive aborde quelques questions relatives à l'analyse socio-économique des exigences et des répercussions des projets lors de la planification de projets.

En premier lieu, il faut déterminer quand les effets socio-économiques doivent entrer en ligne de compte dans les modalités de planification du projet. Dans le cadre du programme de Parcs Canada, les dépenses des projets ont souvent pour objet direct de fournir des installations et des services au public.

Il faut tenir compte des facteurs socio-économiques au cours de l'examen initial et du choix des options s'offrant au projet. On ne saurait raisonnablement décider d'investir sans juger d'abord, au moyen d'une analyse de la fréquentation attendue des lieux, si les équipements ou les services envisagés conviennent par leur dimension ou leur fonctionnement aux fins qu'on se propose d'atteindre. Il arrive que la dimension ou l'exploitation des équipements ou services soient fonction d'hypothèses sur les tendances futures de l'usage ou de la demande, ou que la réalisation des objectifs du projet dépende de facteurs économiques et sociaux qui échappent au contrôle des programmes. Il faut déterminer si un projet peut étayer d'autres politiques de développement à caractère économique et social du gouvernement fédéral, ou s'il peut avoir, au niveau local, des répercussions néfastes substantielles. Moins fréquemment, on exigera d'estimer les avantages économiques possibles, ainsi que les autres retombées.

Deuxièmement, bien que la gestion des parcs et les plans régionaux (ou des unités) puissent envisager des projets particuliers, l'approbation du concept permet souvent de déterminer ce qui va être construit, mais pas où, ni quand, ni les dimensions ou la capacité. Une

Additional analysis may be necessary where the physical design requirements, such as siting, layout, the final dimensions, and loadings are determined from expected visitor use.

Third, there is a need for early identification of requirements for additional data collection and analysis, so that adequate resources with the necessary lead time can be set aside for the completion of these tasks.

DIRECTIVES

1. All project submissions will state whether or not socio-economic effects are major considerations.

2. Where socio-economic effects are major considerations, the project submission will state whether or not existing socio-economic analyses or impact assessments are adequate for the planning and implementation of the project.

3. When additional socio-economic analyses or impact assessments must be undertaken, the project work plan and budget must identify the resources required and the schedule for the completion of these tasks.

4. When socio-economic effects are major considerations either a summary of the conclusions and recommendations or a complete report of any analysis or assessment undertaken must be provided in supporting documentation. Any socio-economic analysis or impact assessment should be available on request for management review.

analyse plus approfondie peut être nécessaire lorsque la fréquentation des lieux détermine les exigences de la conception physique, comme le choix de l'emplacement, le plan, les dimensions finales et l'équipement.

Troisièmement, il faut déterminer assez tôt les exigences concernant la cueillette et l'analyse de données supplémentaires pour affecter les ressources adéquates à ces tâches tout en leur accordant le temps nécessaire pour les compléter.

DIRECTIVES

1. Toute soumission de projet doit stipuler si les effets socio-économiques doivent entrer en ligne de compte dans les modalités de planification du projet.

2. Lorsque les effets socio-économiques doivent entrer en ligne de compte, la soumission de projet stipulera si les analyses socio-économiques ou les évaluations de l'impact socio-économique sont adéquates pour la planification et la réalisation du projet.

3. Lorsque des analyses socio-économiques ou des évaluations de l'impact socio-économiques supplémentaires doivent être réalisées, le plan de travail et le budget du projet doivent identifier les ressources nécessaires et l'horaire prévu pour compléter ces tâches.

4. Lorsque les effets socio-économiques entre en ligne de compte, un résumé des conclusions et des recommandations ou un rapport exhaustif de toute analyse ou de toute évaluation entreprises seront fournis comme documentation d'appui. Toute analyse socio-économique ou toute évaluation de l'impact socio-économique devraient, sur demande, être mises à la disposition des gestionnaires pour qu'ils puissent en faire la revue.

5. For projects included in previous submissions, additional analysis of the socio-economic aspects of the project's design or impacts may not be required but when only preliminary approval has been given to proceed with the project, when major revisions have been made to a proposal or when major delays have been encountered, then any socio-economic analysis or impact assessment will also have to be reviewed, revised, and updated as appropriate.

6. Proposals for the collection and analysis of socio-economic data will comply with Treasury Board Administrative Policy, Manual Chapter 425, as well as with any DOE and Parks Canada directives.

PROCEDURES

Not all of these steps may apply but each step should be considered in project planning. The type of data required, as well as the content and level of analysis will vary with each stage of planning and implementation of the project.

Project Concept

1. If the project proposal is part of an approved management or area plan, the project sponsor should review the plan to ensure that:

   a) socio-economic assumptions (such as level of demand or use) affecting the realisation of project objectives, the choice of design factors and the phasing of development and implementation have been identified;

5. Quand les projets ont déjà fait l'objet de propositions antérieures, il n'est pas toujours nécessaire de soumettre de nouvelles analyses socio-économiques ou de nouvelles évaluations de l'impact socio-économiques. Cependant, dans le cas où les projets n'ont reçu qu'une autorisation préliminaire ou s'il y a eu d'importantes révisions faites à la proposition ou encore des retards sérieux dans le développement du projet, il faudra alors faire la revue, réviser et mettre à jour l'analyse socio-économique ou l'évaluation de l'impact socio-économique avec les ajustements qui s'imposent.

6. Toute proposition relative à la cueillette et à l'analyse de données socio-économiques devra être conforme au chapitre 425 du Manuel de la politique administrative du Conseil du Trésor, ainsi qu'aux directives d'Environnement Canada et de Parcs Canada.

MARCHE À SUIVRE

Les étapes suivantes ne s'appliquent pas nécessairement à tous les cas, mais chacune d'entre elles doit être envisagée lors de la planification de projets. Le type de données nécessaires et la complexité de l'analyse varieront à chaque étape des travaux de planification et de mise en oeuvre du projet.

Concept du projet

1. Si la proposition de projet fait partie d'un plan de gestion ou d'un plan sectoriel approuvés, le parrain du projet devrait revoir le plan afin de s'assurer que:

   a) les hypothèses socio-économiques (comme le niveau de la demande ou de l'utilisation) sous-tendant la réalisation des objectifs du projet, le choix des facteurs de conception et l'échelonnement de sa mise en oeuvre ont été précisées;

b) adverse local social and economic impacts have been screened and evaluated;

c) any economic benefits (if part of the rationale for the project) have been identified;

d) substantial support for other federal government social and economic development policies has been identified;

e) reference to any preliminary socio-economic data collection and analysis has been provided in plan documentation.

2. If the project proposal is not part of an approved management or area plan, the project sponsor will provide:

a) an explicit description of the proposed user requirements including

- user objectives (eg. information and orientation, recreation, accommodation);
- the size and characteristics of user groups;
- the proposed operating season (including daily hours of operation if practicable);
- the manner and extent to which the project will meet current and anticipated visitor needs;
- locational and other contextual factors affecting visitor use, in particular the project's relationship to similar facilities in the immediate vicinity (eg. private sector campgrounds

b) les répercussions sociales et économiques néfastes au niveau local ont été examinées et évaluées;

c) les bénéfices économiques (s'ils font partie de la justification du projet) ont été identifiés;

d) le projet sert d'appui substantiel à d'autres politiques de développement économique et social du gouvernement fédéral;

e) la documentation du plan de gestion ou du plan sectoriel fait état des données socio-économiques préliminaires qui ont déjà été recueillies et analysées.

2. Si la proposition de projet ne fait pas partie d'un plan de gestion ou d'un plan sectoriel approuvés, le parrain du projet devra fournir:

a) une description complète des besoins que comporte l'utilisation envisagée, y compris:

- les objectifs de la clientèle (par exemple, information et orientation, récréation et hébergement);
- la dimension et les caractéristiques des groupes servis;
- la durée de la saison d'exploitation (y compris, si possible, les heures d'ouverture quotidiennes);
- la façon et la mesure selon lesquelles le projet satisfera les besoins actuels et prévus de la clientèle;
- les facteurs liés à l'emplacement ou au contexte qui influent sur l'utilisation, en particulier les relations existantes entre le projet et les installations similaires dans le voisinage immédiat (par exemple, les terrains

within a reasonable distance of park campgrounds);

b) a life-cycle costing of project planning options, using economic cost and visitor use criteria;

c) a preliminary screening of potential local social and economic impacts.

Project Definition

1. If socio-economic effects are:

a) not a major consideration in the definition of the project; or

b) available information and analysis is adequate for the planning and implementation of the project;

then the management decision that no further data collection or analysis is required, should be minuted in the project submission.

2. If socio-economic effects are major considerations, the responsibility should be assigned and resources should be identified for any of the following tasks which may have to be undertaken as a result of management review of the project brief:

a) forecasts of external social and economic factors affecting the realisation of project objectives, the implementation or phasing of the project;

b) comparisons of proposed options for the implementation of a project, in terms of cost

de camping du secteur privé raisonnablement rapprochés des terrains de camping de Parcs Canada);

b) l'établissement, pour des décisions budgétaires, des coûts du cycle chronologique des options de planification de projets, basés sur des critères de coûts économiques et d'utilisation par les visiteurs;

c) une vérification préliminaire de la possibilité d'impacts socio-économiques locaux.

Définition du projet

1. Si les effets socio-économiques:

a) n'interviennent pas de façon importante dans la définition du projet; ou

b) sont documentés et que l'analyse convienne à la planification et à la mise en oeuvre du projet;

la gestion doit alors indiquer dans le procès-verbal de soumission du projet qu'il n'y a pas lieu de procéder à la cueillette de plus amples données ou de leur analyse.

2. Si les effets socio-économiques interviennent de façon importante, il faudra répartir les responsabilités et déterminer les ressources concernant chacune des tâches suivantes qu'on aura peut-être à entreprendre après que la gestion aura examiné l'énoncé de projet:

a) prévoir les tendances sociales et économiques extérieures affectant la réalisation des objectifs du projet, la mise en oeuvre ou l'échelonnement du projet;

b) comparer les options proposées pour l'exécution d'un projet, en fonction du coût et de la réalisation and the realisation of project objectives, for the review and selection of the preferred development option or facility mix;

c) estimates or projections of usage, from the initial year the project becomes operational to the design year when the project's planned capacity will be reached, affecting project design requirements;

d) the evaluation of significant adverse local social and economic impacts to identify, cost and recommend mitigating measures;

e) estimates or projections of local economic benefits or spin-offs.

3. If the collection of socio-economic data is required:

a) the responsibility for identifying research requirements should be assigned;

b) existing secondary source data should be reviewed;

c) when additional data is needed for the analysis of project requirements or impacts, a research proposal should be prepared for regional review and approval-in-principle;

d) when data collection from the public is required, a research planning report should be prepared and submitted for review and subsequent registration with the Federal Statistical Activities Secretariat and Treasury Board;

e) adequate resources and sufficient lead time should be

des objectifs, en vue d'aider à l'examen et au choix de l'option préférable pour ce qui est de la mise au point du projet;

c) estimer ou projeter l'utilisation sous-tendant les exigences de la conception du projet, à compter de la première année de l'entrée en opération du projet jusqu'à l'année de conception, lorsqu'on atteindra la capacité anticipée du projet;

d) évaluer les répercussions sociales et économiques significatives qui peuvent être néfastes au niveau local pour déterminer le coût et proposer des mesures atténuantes;

e) estimer ou projeter les avantages ou les retombées sur l'économie locale.

3. S'il est nécessaire de rassembler des données socio-économiques supplémentaires, il faut:

a) attribuer la responsabilité de déterminer les besoins en matière de recherche;

b) faire la revue des sources secondaires de données existantes;

c) rédiger une proposition de projet, destinée à être examinée et approuvée en principe au niveau régional, si l'analyse des exigences et des répercussions du projet requiert un complément de données;

d) lorsqu'il faut recueillir des données auprès du public, préparer un plan de recherche qui sera soumis et puis enregistré au Secrétariat fédéral des activités statistiques et au Conseil du Trésor;

e) préciser les ressources adéquates et un délai suffisant identified for any additional data collection and analysis required.

Pre-Design

1. If any socio-economic analysis or impact assessment is required, it should normally have been identified, carried out and included in the project brief for information. When additional data collection and analysis is required, these requirements will be identified in the project brief to be carried out as part of the pre-design stage of the project:

a) user projections should be reviewed and updated when necessary if estimates of peak hour loading factors are required for the design of project components.

Assistant Deputy Minister
(Parks Canada)

pour pouvoir rassembler et analyser toutes les données supplémentaires nécessaires.

Avant projet

1. Si une analyse socio-économique ou une évaluation de l'impact socio-économique sont requises, on devrait ordinairement les avoir précisés, entrepris et inclus, à titre de renseignements, dans l'énoncé du projet. Lorsqu'un rassemblement et une analyse de plus amples données s'imposent, ces exigences seront précisées dans l'énoncé du projet rédigé pendant l'étape de l'avant-projet.

a) Au besoin, il faudrait faire la revue et mettre à jour des prévisions sur l'utilisation des lieux si la conception des composantes du projet exige que l'on connaisse la fréquentation durant les heures de pointe.

Sous-ministre adjoint
(Parcs Canada)

A.T. Davidson

APPENDIX A

INVOLVEMENT

The following is intended as a guide to the appropriate level of involvement of FHQ and the Regions in the socio-economic analysis of project requirements and impacts. Its purpose is to clarify and more fully describe the process involved while respecting existing delegation of authority and decentralization of the Parks Canada Program.

Region/Field

The sponsoring region is functionally responsible for the socio-economic analysis of project requirements and impacts. This involvement implies that:

1. The sponsor should identify and describe visitor use requirements and socio-economic impacts;

2. If necessary, additional data collection and analysis required for the completion of the project should be identified through management review of the project proposal;

3. The region should identify these tasks as sub-project(s) or milestones on the project implementation plan, as well as the necessary resources and schedule for their completion;

4. For all data collection activities involving direct requests for information from the public, a research planning report will be prepared and submitted for review and subsequent registration with the Federal Statistical Activities Secretariat and Treasury Board.

ANNEXE A

ENGAGEMENT

Ce qui suit peut servir de guide au niveau approprié de l'administration centrale et des régions lors de l'analyse socio-économique des exigences et des répercussions d'un projet. On tentera d'y préciser et d'y décrire de façon plus détaillée les modalités en question tout en se conformant à la délégation actuelle des pouvoirs et à la décentralisation du programme de Parcs Canada.

Région/Terrain

La région qui présente le projet est responsable, sur le plan fonctionnel, de l'analyse socio-économique et de l'évaluation de l'impact socio-économique et des exigences du projet. Cette implication sous-entend que:

1. le parrain du projet doit identifier et décrire les exigences de l'utilisation par les visiteurs et les répercussions socio-économiques;

2. au besoin, la gestion examinera la proposition du projet afin de déterminer si la cueillette et l'analyse des données supplémentaires sont nécessaires à l'achèvement du projet;

3. l'administration régionale devra considérer ces tâches comme des sous-projets ou des jalons dans le plan d'exécution du projet, identifier les ressources et l'échéance nécessaires à leur achèvement;

4. pour toute collecte de données qui exige des demandes d'information directe du public, un rapport de planification de recherche sera préparé et soumis pour examen et enregistrement subséquent au Secrétariat fédéral des activités statistiques et au Conseil du Trésor.

PHQ: Socio-Economic Branch

The Socio-Economic Branch (SEB) is responsible for the provision of functional advice and guidance on the analysis and collection of socio-economic data. This involvement implies that:

1. SEB will provide functional advice and guidance, as required, to identify criteria for the review of proposed visitor use requirements and any social and economic impacts that are likely to occur as a result of projects undertaken by Parks Canada;

2. SEB will provide assistance in identifying data sources and in obtaining social and economic information;

3. SEB will provide functional guidance and advice on research methodology and analytical techniques which may be used to analyze project requirements and social and economic impacts;

4. SEB will co-ordinate the review/approval process for research planning reports required by Treasury Board and Statistics Canada;

5. SEB will participate in the program headquarters review of regional expenditure proposals and may assist in the preparation of program submissions as required.

Administration centrale: Direction socio-économique

La Direction socio-économique a la responsabilité de fournir conseils et orientation fonctionnels relatifs à l'analyse et à la collecte de données socio-économiques. Cette implication sous-entend que:

1. la Direction socio-économique donnera, selon le cas, conseils et orientation fonctionnels pour identifier les critères d'examen des besoins d'utilisation de la fréquentation attendue des lieux et tout impact socio-économique qui pourrait survenir à la suite de projets entrepris par Parcs Canada;

2. la Direction socio-économique assistera dans l'identification des sources de données et dans l'obtention d'information socio-économique;

3. la Direction socio-économique fournira conseils et orientation fonctionnels pour la méthodologie de recherche et les techniques d'analyse utilisables dans l'analyse des exigences d'un projet et des répercussions sociales et économiques;

4. la Direction socio-économique coordonnera les processus d'examen et d'approbation concernant les rapports de planification de recherche, ainsi requis par le Conseil du Trésor et Statistique Canada;

5. la Direction socio-économique participera au programme d'examen des propositions de dépenses régionales et au besoin pourra aider à la préparation des soumissions de programme.

3.0 T.B. CIRCULAR NO. 1983-25 - "Approval of Capital Projects and Long Term Capital Plans"

Treasury Board of Canada Secretariat
Conseil du Trésor du Canada Secrétariat

Ottawa Canada
K1A 0R5

Circular No.: 1983-25

TB No.: 787834

Date: May 1, 1983

To: Deputy Heads of Departments and Heads of Agencies

Subject: Approval of Capital Projects and Long-Term Capital Plans

INTRODUCTION

Purpose and Scope

1. This circular has two purposes:

a) to redefine the nature of capital project approval in the light of recent Treasury Board policies on cost control of projects, and to revise the limits of the authority which rests with heads of Departments with respect to the approval of capital projects (Part I); and

b) to introduce the concept of Long-term Capital Plans for the determination of budget levels for capital programs in the context of multi-year Operational Plans (Part II).

2. Special limits are set forth in the Administrative Policy Manual, Chapter 440, "Electronic Data Processing" for the approval in principle of EDP equipment. These limits are not changed by the provisions of this circular.

Circulaire No: 1983 -25

C.T. n^{o}: 787834

Date: 1er mai 1983

Aux: Sous-chefs des ministères et chefs des organismes

Objet: Approbation des projets d'investissement et des plans d'investissement à long terme

INTRODUCTION

Objet et portée

1. La présente circulaire a deux objectifs:

a) redéfinir la nature de l'approbation des projets d'investissement, compte tenu des récentes politiques du Conseil du Trésor sur le contrôle du coût des projets, et réviser les plafonds des pouvoirs appartenant aux chefs des ministères en ce qui concerne l'approbation des projets d'investissement (Partie I); et

b) faire intervenir le concept des plans d'investissement à long terme dans la détermination des niveaux des budgets des plans d'investissement dans le cadre des plans opérationnels pluriannuels (Partie II).

2. Des plafonds de dépenses spéciaux sont énumérés au chapitre 440 du Manuel de la politique administrative (Informatique) en ce qui concerne l'approbation de principe du matériel informatique. Ces plafonds ne sont pas modifiés par la présente circulaire.

Canada

3. Wherever the provisions of any legislation or regulation require that specific Treasury Board approval be sought for projects at cost limits lower than those stated herein, the provisions of such legislation or regulation shall take precedence over the provisions of this circular.

4. This circular is not concerned with contract authorities or project management. With regard to major crown projects, provisions for their approval, management and reporting are contained in Chapters 140, 141, 142 and 143 of the Administrative Policy Manual.

Application

5. This circular letter applies to all departments and agencies listed in Schedules A and B of the Financial Administration Act, as well as branches designated as departments for the purposes of that Act.

References

6. This circular should be read in conjunction with:

- the Administrative Policy Manual Chapter 148 (Cost Control of Projects) and Chapter 145 (Management of Projects);
- the Policy and Expenditure Management System (PEMS) Submissions Manual, which contains additional information related to capital budgeting, particularly the reporting requirements for capital programs and capital projects.

3. Lorsqu'une loi ou un règlement exige la demande d'une autorisation expresse au Conseil du Trésor pour des projets dont les plafonds des coûts sont inférieurs à ceux indiqués dans la présente, cette loi ou ce règlement l'emporte sur la présente circulaire.

4. La présente circulaire ne porte pas sur les pouvoirs concernant les marchés ni sur la gestion des projets. Les dispositions concernant l'approbation, la gestion et l'établissement des rapports à l'égard des grands projets de la Couronne figurent aux chapitres 140, 141, 142, et 143 du Manuel de la politique administrative.

Champ d'application

5. La présente circulaire s'applique à tous les ministères et organismes figurant aux annexes A et B de la Loi sur l'administration financière, ainsi qu'aux services désignés comme ministères pour l'application de ladite loi.

Références

6. On doit lire la présente circulaire en se rapportant aux documents suivants:

- le chapitre 148 (Contrôle des coûts des projets) et le chapitre 145 (Gestion des projets) du Manuel de la politique administrative;
- le Manuel des présentations du système de gestion des politiques et des dépenses (SGPD), qui contient des renseignements supplémentaires sur la budgétisation des projets d'investissement, en particulier au sujet des rapports exigés sur les programmes et les projets d'investissement.

Authorities and Cancellation

7. This circular takes effect on the date of publication and cancels Chapter 5.4 of the Guide on Financial Administration (formerly TB Circular 1978-46). This chapter will be amended to reflect the content of this circular.

DEFINITIONS

8.

(a) Project is defined in Chapter 148 of the Administrative Policy Manual (1.6). In this context the term capital project refers more particularly to the acquisition of land, the design, development, construction or acquisition of buildings, roads, works, machinery, furnishings and equipment, including major alterations or modifications which change their respective performance or capability. (Note: for the purposes of capital budgeting and for capital project approvals, the above items are considered capital projects even if they are to be financed through a long-term lease-purchase arrangement.)

(b) Project approval means the authority to undertake and complete a project, including the initiation of expenditures in accordance with a cash-flow schedule set out by the department in its request or as amended by Treasury Board. (Within the total approved cost of a project, departments may alter the cash-flow schedule.)

Autorisation et annulations

7. La présente circulaire entre en vigueur à la date de sa publication et annule le chapitre 5.4 du Guide d'administration financière (autrefois la circulaire du CT N° 1978-46). Ce chapitre sera modifié de façon à refléter la présente circulaire.

DEFINITIONS

8.

a) Le mot projet est défini au chapitre 148 du Manuel de la politique administrative (1.6). Dans ce contexte, l'expression projet d'investissement désigne plus particulièrement l'acquisition de terrain, la conception, l'élaboration, la construction ou l'acquisition d'édifices, de routes, d'ouvrages, de machines, d'ameublements et d'équipement, y compris toute transformation ou modification importante qui changerait leur efficacité ou leur potentiel respectif. (Nota: pour les besoins de la budgétisation de l'investissement et de l'approbation des projets d'investissement, les items mentionnés doivent être considérés comme des projets d'investissement, même s'ils sont financés en vertu d'une entente à long terme de location-achat.)

b) L'expression approbation des projets désigne le pouvoir d'entreprendre et de mener à bien un projet, y compris engager des dépenses conformément au calendrier des mouvements de trésorerie, indiqué par le ministère dans sa demande ou modifié par le Conseil du Trésor. (En deçà du coût total approuvé du projet, les ministères peuvent modifier le calendrier des mouvements de trésorie.)

Project approval now falls into three basic categories, i.e., preliminary project approval, effective project approval and overrun approval, as set out in Chapter 148 of the Administrative Policy Manual.

(c) A capital program is a set of capital projects and, for capital budgeting purposes, includes both approved and planned capital projects.

(d) Current dollars means dollars of the fiscal year in which expenditures will be made; they are also called budget year dollars.

(e) Constant dollars means dollars tied to a base year.

(f) Project cost, is the total estimated expenditure (stated in both constant and current dollars) to be incurred over time for all aspects of a project. It includes such items as site acquisition and preparation, acquisition fees, design, legal fees, material, supplies, services, contingencies, and human resources.

(g) A Long-term Capital Plan is a Treasury Board approved plan which outlines, for a departmental capital program or portion thereof: long term capital strategies and objectives; an analytical framework for the selection and assessment of capital projects; a proposed means for determining appropriate budget levels over the period of the plan; an initial listing of selected projects

Les approbations des projets se classent actuellement en trois catégories de base, à savoir les approbations préliminaires des projets, les approbations effectives des projets et les approbations des dépassements de coût, conformément au chapitre 148 du Manuel de la politique administrative.

c) Un programme d'investissement est l'ensemble des projets d'investissement et, pour les besoins de la budgétisation de l'investissement, y compris les projets d'investissement approuvés et prévus.

d) Le terme dollars courants désigne les dollars de l'année financière pendant laquelle les dépenses seront engagées: on les appelle aussi dollars de l'annéebudgétaire.

e) Le terme dollars constants réfère à la valeur des dollars pendant une année de base.

f) Les coûts du projet représentent le total des dépenses estimatives (exprimées en dollars constants et courants) qui devront être engagées pour tous les aspects d'un projet. Cela comprend l'acquisition et l'aménagement du terrain, les frais d'acquisition, la conception, les honoraires des conseillers et des avocats, le coût du matériel, des approvisionnements, des services, des dépenses imprévues et des ressources humaines.

g) Le terme plan d'investissement à long terme désigne un programme approuvé par le Conseil du Trésor qui présente, à l'égard d'un programme d'investissement d'un ministère ou d'une partie de programme, les stratégies et les objectifs à long terme, le cadre analytique de la sélection et de l'évaluation des projets d'investissement, les moyens proposés pour déterminer les niveaux budgétaires appropriés pour la durée du pro-

and their preferred scheduling; and any other agreed upon provisions related to the program (e.g. level of delegation for the approval of capital projects or classes of capital projects).

PART I CAPITAL PROJECTS

Treasury Board Approval of Capital Projects

9. Departments are required to seek approval from the Treasury Board for all capital projects for which the total estimated project cost, in current dollars, is more than $1,000,000, or for any capital project for which a specific submission has been requested by the Treasury Board (departments may seek higher levels of authority for the approval of capital projects from the Treasury Board). Treasury Board authority is also required whenever the cost of a project initially approved under departmental authority is expected to exceed $1,000,000 (or to exceed the approved level of departmental authority if higher than this level). For projects, exceeding departmental authority, TB approval must be sought not only to change the approved total cost of a project, but also to increase or reduce the quality, capability, capacity or scope of the original project even though the original funding level remains unchanged.

Mechanisms for the Approval of Capital Projects

10. There are two mechanisms by which the Treasury Board may approve capital projects:

(a) Multi-year Operational Plans; or
(b) separate project submissions to the Treasury Board.

gramme, une liste initiale des projets choisis et leur calendrier idéal, et toute autre disposition acceptée concernant le programme (par ex. le niveau de délégation de pouvoirs pour l'approbation des projets d'investissement ou les catégories des projets.

PARTIE I: PROJETS D'INVESTISSEMENT

Approbation des projets d'investissement par le Conseil du Trésor

9. Les ministères doivent faire approuver par le Conseil du Trésor tous leurs projets d'investissement dont le coût total estimatif, en dollars courants, dépasse $1 million, ou pour lequel le Conseil du Trésor a demandé une présentation particulière (des ministères peuvent demander au Conseil du Trésor des niveaux d'autorité de pouvoirs plus élevés pour l'approbation des projets d'investissement). Il faut aussi demander l'autorisation du Conseil du Trésor lorsqu'on prévoit que le coût d'un projet déjà approuvé par un ministère en vertu des pouvoirs qui lui sont autorisés, dépassera $1 million (ou dépassera le niveau que le ministère est autorisé à approuver si ce dernier est plus élevé). Pour les projets qui excèdent l'autorité de pouvoirs d'un ministère, l'approbation du Conseil du Trésor est nécessaire pas seulement pour changer le coût total approuvé d'un projet mais aussi pour augmenter ou réduire la qualité, le caractère ou l'importance d'un projet original, même si les fonds qui étaient affectés demeurent les mêmes.

Mécanismes d'approbation des projets d'investissement

10. Le Conseil du Trésor peut approuver les projets d'investissement selon deux mécanismes:

a) les plans opérationnels pluriannuels; ou
b) les présentations distinctes au Conseil du Trésor concernant des projets.

11. Departments may use the Spring or Fall submission of the Multi-year Operational Plan (MYOP) to seek preliminary or effective project approval for capital projects which exceed their authority. To obtain such approval, supporting data of the same scope and depth as would be provided in a separate submission will be required. Following consideration of the Operational Plan by the Treasury Board, each department will be informed in writing of any projects for which Treasury Board approval is not being given, or for which a separate submission will be required. The same letter will state that the remaining capital projects are approved. This will apply to both preliminary and effective project approvals. It should also be noted that approvals can be sought in the MYOP for projects beginning in the current year.

12. Departments may, at any time, seek Treasury Board approval for capital projects which have not been included in their Operational Plans, by means of separate submissions.

Approval of Cost Overruns on Capital Projects

13. A separate submission will be required to obtain approval for a cost overrun on a capital project, i.e. any required increase to the total estimated cost of a project after effective project approval (see Sections 2.7 and 4.2 of Chapter 148 of the Administrative Policy Manual). This applies to any capital project whose total estimated cost exceeds departmental authority, even if the project was originally approved under departmental authority.

11. Les ministères peuvent utiliser la présentation du printemps ou de l'automne du plan opérationnel pluriannuel (POP) pour l'approbation préliminaire ou effective des projets d'investissement dont le coût dépasse les pouvoirs qui leur sont délégués. Pour obtenir cette approbation, il faut fournir des données justificatives aussi détaillées et aussi précises que s'il s'agissait d'une présentation distincte. Après avoir étudié leur plan opérationnel, le Conseil du Trésor signale par écrit à chaque ministère les projets qui n'ont pas été approuvés ou qui nécessitent une présentation distincte. La même lettre indique que les autres projets d'investissement sont approuvés. Ceci s'applique aux approbations préliminaires et aux approbations effectives des projets. Il faut aussi souligner qu'on peut demander ces approbations de projets dans les POP pour les projets qui doivent commencer pendant l'année en cours.

12. Les ministères peuvent, n'importe quand, au moyen de présentations distinctes, demander au Conseil du Trésor d'approuver les projets d'investissement qui ne figurent pas dans leurs plans opérationnels.

Approbation des dépassements de coût des projets d'investissement

13. Il faut soumettre une présentation distincte pour obtenir l'approbation de dépasser le coût d'un projet d'investissement, c.-à-d. toute augmentation requise du coût total estimatif d'un projet après son approbation effective (voir les articles 2.7 et 4.2 du chapitre 148 du Manuel de la politique administrative). Cette politique s'applique à tous les projets d'investissement où le coût total estimé excède l'autorité du ministère, même si le projet avait été approuvé originalement sous l'autorité du ministère.

Information Requirements for Treasury Board Approval of Capital Projects

14. The attached Annex A provides an itemization of information to be provided for capital projects requiring Treasury Board approval.

Reporting Requirements for Capital Projects

15. Capital projects will be reported on semi-annually, at the time of the Spring and Fall submissions of the Multi-Year Operational Plan.

16. These semi-annual reports will replace the Quarterly Capital Budget Reports that departments are currently required to submit to the Treasury Board Secretariat, and will also provide information necessary for cost control reporting requirements on capital projects. The details of these reporting requirements are set out in the PEMS Submissions Manual, Chapter 6. (This Chapter also describes additional information requirements concerning overall capital programs that will be necessary in the context of the Multi-Year Operational Plan).

PART II LONG-TERM CAPITAL PLANS

17. Determining Budget Levels for Capital Programs

Budget levels for capital programs are determined through the Multi-Year Operational Planning process. In the standard case, this involves the review, in the Spring Operational Plan, of the cash requirements for projects already begun or scheduled to begin in the 3 year forward planning period of the MYOP. However, departments may develop and have

Renseignements requis pour l'approbation des projets d'investissement par le Conseil du Trésor

14. L'annexe A ci-jointe fournit une liste des renseignements requis pour les projets d'investissement qui doivent être approuvés par le Conseil du Trésor.

Rapports exigés sur les projets d'investissement

15. Les projets d'investissement sont déclarés tous les six mois, au moment des présentations du printemps et de l'automne des plans opérationnels pluriannuels.

16. Ces rapports semestriels remplaceront les rapports trimestriels sur les budgets d'investissement que les ministères sont actuellement tenus de soumettre au Secrétariat du Conseil du Trésor et fourniront les renseignements nécessaires au contrôle des coûts des projets. Ces exigences sont énoncées en détail au chapitre 6 du Manuel des présentations du SGPD. (Ce chapitre décrit aussi les renseignements supplémentaires concernant les programmes d'investissement généraux qui seront nécessaires dans le cadre du plan opérationnel pluriannuel).

PARTIE II PLANS D'INVESTISSEMENT À LONG TERME

17. Détermination des niveaux budgétaires des programmes d'investissement

Les niveaux budgétaires des programmes d'investissement sont déterminés au moyen du processus relatif aux plans opérationnels pluriannuels. Dans les cas ordinaires, cela comporte l'examen, dans le cadre du plan d'opérationnel pluriannuel, des besoins de fonds pour les projets déjà entrepris ou qui doivent commencer au cours de la période de planification de 3 ans du POP. Cependant, les ministères peuvent

approved by the Treasury Board a Long-term Capital Plan, which would establish capital budget levels (or reference levels) extending through the Operational Planning time-frame and beyond. The Long-term Capital Plan, which is discussed below, is considered a complement to the MYOP process. Details on the MYOP process are contained in the PEMS Submissions Manual.

18. Details on Long-Term Capital Plans

(a) Basic Objectives

As a general principle, Long-term Capital Plans will be as flexible as possible, because of the wide difference in the nature of capital programs in departments, and in order to accommodate existing capital plans and strategies. The basic objectives for introducing Long-term Capital Plans are as follows:

(i) to ensure the development of capital strategies in departments based on responsible asset management (i.e. taking account of operational requirements, maintenance of the required asset base, operating costs, revenue opportunities, and the ultimate disposal of surplus assets);

(ii) to ensure that capital inputs can be directly related to both program objectives and expected results;

élaborer et faire approuver par le Conseil du Trésor un plan d'investissement à long terme qui fixe les niveaux budgétaires (ou les niveaux de référence) de ces programmes et s'étend sur la période couverte par les plans opérationnels et au-delà. Le plan d'investissement à long terme, que nous analysons ci-dessous, est considéré comme un complément du processus relatif aux POP. Dans le Manuel des présentations du SGPD, on retrouve de plus amples renseignements sur le processus relatif au POP.

18. Renseignements sur les plans d'investissement à long terme

a) Objectifs fondamentaux

En principe, les plans d'investissement à long terme doivent être aussi souples que possible en raison de la grande différence qui existe dans la nature des programmes d'investissement des ministères et afin de tenir compte des plans d'investissement et des plans d'action existants. Les objectifs qui sous-tendent l'application des plans d'investissement à long terme sont les suivants:

(i) assurer l'élaboration de stratégies reposant sur une gestion réfléchie des immobilisations en ce qui concerne l'équipement dans les ministères (c.-à-d. tenir compte des besoins des opérations, du maintien de l'assiette des immobilisations nécessaires, des coûts de fonctionnement, des possibilités de recettes et de la liquidation des immobilisations excédentaires);

(ii) assurer un rapprochement direct entre, d'un côté, les immobilisations et, de l'autre côté, les objectifs du programme et les résultats prévus;

(iii) to provide Treasury Board with a common perspective for resource decisions on capital investments while at the same time incorporating features that recognize differences among departments and permit sufficient flexibility to accommodate those differences;

(iv) to provide a basis for establishing long-term budget levels for capital programs;

(v) to provide an analytical framework for the selection and assessment of capital projects based on acceptance criteria, and an initial listing of selected projects and their preferred scheduling.

(b) Relationship to the Operational Plan Framework

This circular discusses Long-term Capital Plans in the context of departmental capital programs. It will be the responsibility of each department to relate the provisions of the circular, to its Operational Plan Framework and planning elements, especially with respect to linking its capital strategies to results.

(c) Guidelines for development of a Long-term Capital Plan

(i) Applicability. Long-term Capital Plans are not mandatory, but their development is encouraged. The decision to develop such a plan should be taken in close consultation with Treasury Board

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(iii) fournir au Conseil du Trésor une vision commune en ce qui concerne les décisions sur les ressources en matière de mise de fonds tout en intégrant des éléments qui tiennent compte des différences entre les ministères et assurent une souplesse suffisante pour faire place à ces différences;

(iv) fournir une base pour l'établissement des niveaux budgétaires à long terme pour les programmes d'investissement;

(v) fournir un cadre analytique pour la sélection et l'évaluation des projets d'investissement fondé sur les critères d'acceptation ainsi qu'une liste initale des projets sélectionnés et de leur calendrier idéal.

b) Rapports avec le cadre du plan opérationnel

La présente circulaire étudie les plans d'investissement à long terme dans le cadre des programmes d'investissement des ministères. Il incombe à chaque ministère d'appliquer les dispositions de cette circulaire à leur cadre de plan opérationnel et aux éléments de planification, en particulier en ce qui concerne la corrélation entre leurs stratégies en matière d'immobilisations et les résultats.

c) Lignes directrices concernant l'élaboration d'un plan d'investissement à long terme

(i) Applicabilité. On encourage l'élaboration de plans d'investissement à long terme bien qu'ils ne soient pas obligatoires. Cependant, la décision d'élaborer un tel plan doit être prise en étroite collaboration avec le

Secretariat. There may be situations where departments are requested by Treasury Board or Treasury Board Secretariat to submit a Long-term Capital Plan for consideration by Ministers. As a general rule, Long-term Capital Plans for Treasury Board approval should be developed for capital programs which fit the following criteria:

- the capital program is large, either in absolute terms or in relation to overall departmental expenditures (e.g. more that $5 million annually);
- the nature of the capital program is such that a rational process for establishing priorities is essential;
- a forward planning period of more than 3 years is necessary for proper consideration of capital strategies; and
- the capital program is comprised of a large number of interrelated projects whose co-ordination is essential and whose overall cash-flow must be managed.

(ii) Essential Components. In order to develop a Long-term Capital Plan, departments must address a number of basic issues

Secrétariat du Conseil du Trésor. Il peut y avoir des cas où le Conseil du Trésor ou le Secrétariat du Conseil du Trésor demande aux ministères de présenter un plan d'investissement à long terme aux ministres du Conseil afin qu'ils l'étudient. En général, il faut élaborer des plans d'investissement à long terme qui seront soumis à l'approbation du Conseil du Trésor pour les programmes d'investissement qui répondent aux critères suivants:

- il s'agit d'un grand programme d'investissement, dans l'absolu ou par rapport aux dépenses globales du ministère (par ex. plus de $5 millions par an);
- la nature du programme d'investissement est telle qu'il est indispensable d'élaborer une façon rationnelle d'établir les priorités;
- une période de planification préalable de plus de 3 ans est nécessaire pour pouvoir dûment étudier les stratégies en matière d'immobilisations;
- le programme d'investissement comprend un grand nombre de projets interdépendants dont la coordination est indispensable et dont les mouvements de trésorerie globaux doivent être gérés.

(ii) Elements essentiels. Avant d'élaborer un plan d'investissement à long terme, les ministères doivent régler un certain nombre de questions de base en with respect to their capital programs and capital investment strategies. Depending on the nature of the overall program, these could include the following:

- the extent of comprehensive and reliable inventories of existing capital assets, including methodology for the valuation of these assets, if needed (inventories should include, as a minimum, description, location and condition);
- basic asset maintenance or plant preservation strategies which address, over the long-term, all issues related to the existing asset base including depreciation and disposal of surplus assets;
- the impact of selected capital strategies on operating costs and on person-year utilization, including an assessment of this impact on resource requirements as outlined in the MYOP;
- long-term plans for the replacement of equipment (including EDP equipment) and other minor capital such as furniture;

ce qui concerne leurs programmes d'investissement et leurs stratégies en matière d'immobilisations. Selon la nature du programme global, ce sont, notamment, les questions suivantes:

- l'ampleur des répertoires exhaustifs et sûrs des immobilisations existantes, y compris, au besoin, les méthodes d'évaluations de ces immobilisations (les répertoires devraient au moins comprendre leur description, leur endroit et leur condition);
- les lignes de conduite fondamentales concernant le maintien des immobilisations ou la préservation des établissements qui visent, à long terme, toutes les questions relatives à l'ensemble des immobilisations existantes, y compris, la dépréciation et la liquidation des immobilisations excédentaires;
- les répercussions des lignes de conduite choisies en matière d'équipement sur les coûts de fonctionnement et sur l'utilisation des années-personnes, y compris l'évaluation de ces répercussions sur les besoins en ressources présentés dans le POP;
- les plans à long terme de remplacement de l'équipement, y compris du matériel informatique et du mobilier;

- methodologies for forecasting inflation both at the macro- (reference level) and micro- (project) levels, taking into account the specific nature of the department's capital activities;	- les méthodes servant à prévoir l'inflation, tant au niveau macroéconomique (niveau de référence) qu'au niveau microéconomique (projet), en tenant compte de la nature particulière des activités d'immobilisation du ministère;
- relevant distinctions between discretionary and non-discretionary capital spending, within the overall context of resource utilization for approved programs and levels of service (e.g. capital requirements for future years for which contracts have already been let are considerably less discretionary than certain other projects. Also, capital expenditures may be necessary for safety or security reasons);	- les distinctions pertinentes entre les investissements discrétionnaires et non discrétionnaires, dans le cadre global de l'utilisation des ressources pour les programmes et les niveaux de service approuvés (par ex. les besoins en capital pour les années futures pour lesquels des marchés ont déjà été accordés sont beaucoup moins discrétionnaires que certains autres projets. Aussi, les dépenses en capital peuvent s'imposer pour des raisons de sécurité);
- any other relevant capital acquisition issues, such as "make or buy", "lease vs. purchase," depending on the nature of the capital program in question;	- les autres questions pertinentes concernant les acquisitions d'équipement telles que "faire ou faire faire", "louer ou acheter", selon la nature du programme d'investissement en question;
- a detailed breakdown of planned capital spending by region;	- une répartition détaillée des dépenses d'investissement planifiées par région;
- an assessment of the department's capability to manage the capital program, in-	- l'évaluation de la capacité du ministère de gérer le programme d'investissement, notamment l'organisation,

cluding organization, resource requirements, and mechanisms for determining priorities; and

- description of the department's criteria for establishing priorities and its processes for senior management review of proposed capital investments.

(iii) Special circumstances. In considering the development and use of Long-term Capital Plans, departments will have to consider special circumstances that would affect their long-term capital strategies. Such circumstances could include stated requirements of Cabinet or Cabinet Committees, policy approvals, the existence of a previous Treasury Board approved capital plan, the volume and nature of individual capital projects, etc.

(d) General Considerations

The planning period for a Long-term Capital Plan will, by definition, be longer than the normal 3-year period of the MYOP. It is expected that most of these will cover a 5 to 7 year period. The reference level would constitute a maximum level for capital expenditures within which departments would manage capital projects to meet departmental objectives and produce specific results. This reference level for capital could cover one or more planning elements.

les besoins en ressources et les mécanismes servant à déterminer l'ordre de priorité; et

- la description des critères utilisés par le ministère pour établir l'ordre de priorité et ses mécanismes d'examen par la haute direction des projets de dépenses en capital.

(iii) Cas spéciaux. En étudiant l'élaboration et l'utilisation des plans d'investissement à long terme, les ministères devront étudier les cas spéciaux qui pourraient influer sur les stratégies d'investissement à long terme. Ces cas pourraient comprendre les besoins déclarés du Cabinet ou des comités du Cabinet, l'approbation des politiques, l'existence d'un plan d'investissement déjà approuvé par le Conseil du Trésor, le volume et la nature des projets d'investissement individuels, etc.

d) Considérations générales

Par définition, la période de planification pour un plan d'investissement à long terme sera plus longue que la période normale de 3 ans du POP. On prévoit que, dans la plupart des cas, elle sera de 5 à 7 ans. Le niveau de référence constituerait un niveau maximal pour les dépenses en capital dans le cadre duquel les ministères géreraient les projets d'investissement pour atteindre leurs objectifs et produire des résultats déterminés. Ce niveau de référence pourrait englober plus d'un élément de planification.

(e) Treasury Board Approval

In the Long-term Capital Plan submission to the Treasury Board, based on considerations mentioned in previous sections, departments will submit proposals and seek specific Treasury Board approval for:

- a capital reference level over the life of the Plan, expressed in both constant and current dollars (in principle, this reference level is to represent the cost of maintaining the capital asset base or the achievement of other approved objectives-economic, social, etc. - assuming no change in the quality or levels of service. Such proposals will have to be consistent with the department's planning element structure;
- a framework for the selection and assessment of specific capital projects over the life of the Plan;
- if applicable, levels of authority for capital projects or classes of capital projects which exceed the standard $1,000,000 authority limit; and
- the processes for the evaluation of the Plan, ensuring that relationships are established with respect to the department's program evaluation components.

e) Approbation du Conseil du Trésor

Dans le plan d'investissement à long terme, les ministères consigneront, en fonction des considérations énoncées aux paragraphes antérieurs, des propositions et demanderont une approbation spéciale du Conseil du Trésor pour:

- un niveau de référence pour les dépenses en capital pour la durée du plan, en dollars courants et en dollars constants (en principe, le niveau de référence exprime le coût du maintien à long terme de l'actif immobilisé ou la réalisation d'autres objectifs approuvés (économiques, sociaux, etc.), à supposer qu'il n'y ait aucun changement dans la qualité ou les niveaux des services, et ces propositions devront refléter fidèlement la structure des éléments de planification du Ministère);
- un cadre pour le choix et l'évaluation de projets d'investissement spécifiques pour la durée du plan;
- s'il y a lieu, les niveaux d'autorité pour les projets d'investissement ou les catégories de projets d'investissement lorsqu'ils excèdent le plafond courant de $1 million; et
- le processus pour l'évaluation du plan, en assurant la création de rapports avec les composantes d'évaluation des programmes du Ministère.

In addition to a annual review in the Spring MYOP, Long-term Capital Plans should normally be renewed two years prior to their termination, by means of a further submission to the Treasury Board. If this is not considered appropriate, a specific proposal for renewal should be included at the time the Long-term Capital Plan is submitted to the Treasury Board.

(f) Review in the Spring MYOP

Capital reference levels established when Treasury Board approves a Long-term Capital Plan will be reviewed and, if required, adjusted in each Spring MYOP. The major focus of this review will be the validity of the original inflation assumptions used at the time of the Plan's approval. However, any aspect of the capital reference level could be reviewed at this time, depending on changing circumstances.

Note: The Long-term Capital Plan is not used to seek approval (preliminary or effective) for specific capital projects, even though it may, and likely will, contain an initial listing of selected capital projects.

Further Information

19. For further information on this circular or on its relationship to other Treasury Board policies contained in

En plus d'une révision annuelle au POP du printemps, les plans d'investissement à long terme doivent être ratifiés de nouveau deux ans avant leur fin, au moyen d'une nouvelle présentation au Conseil du Trésor. Si ceci n'est pas considéré approprié, une proposition distincte, de renouvellement devrait être incluse au moment où le plan d'investissement à long terme est soumis au Conseil du Trésor.

f) Révisions au POP du printemps

Les niveaux de référence pour les dépenses en capital sont déterminés au moment de l'approbation du plan d'investissement à long terme par le Conseil du Trésor et sont révisés et modifiés au besoin dans le POP, chaque printemps. La révision portera surtout sur la validité des prévisions concernant l'inflation utilisées lors de l'approbation du plan et des autres aspects du plan. Cependant, tout aspect du niveau de référence pour les dépenses en capital peut être sujet à révision au printemps, selon les circonstances.

Note: Le plan d'investissement à long terme ne sert pas à demander l'approbation (préliminaire ou effective) de projets d'investissement particuliers, même s'il peut contenir, et probablement contient, une liste initiale de certains projets d'investissement.

Autres renseignements

19. Pour de plus amples renseignements sur cette circulaire ou sur ses rapports avec les autres politiques du Conseil du Trésor figurant dans le

the PEMS Submissions Manual, departments should contact the program analyst responsible for their department.

Manuel des présentations du SGPD, les ministères doivent communiquer avec l'analyste des programmes chargé de leur ministère.

Le secrétaire,

J.L. Manion,
Secretary.

Distribution: 1A, 1B, 1C, 2, 3A, 4, 5A, 5B, 11A, 11B, 21A, 21B, 21F, 21G, 21H

ANNEX A

INFORMATION REQUIRED IN SUBMISSIONS

Information required in the MYOP or a separate submission requesting approval of capital projects must be viewed in the context of the types of approval outlined in Treasury Board policy on the Cost Control of Projects. Essentially, capital project approvals would fall into three general categories: preliminary project approval; effective project approval; and, overrun approval (i.e. approval of an increase to total estimated cost after effective project approval has been given). According to these categorizations, the following points are to be covered to the degree applicable in each case:

(Note: in all cases, of course, Treasury Board approval would be contingent on an appropriate justification of benefits versus costs.)

(a) for preliminary approvals

(i) the reason for the project, including the kind and level of service or capability to be initiated, developed or maintained. (Within the context of an approved Long-term Capital Plan, less detail would be acceptable);

(ii) a thorough options analysis, including a full life-cycle costing for each option examined (c.f. Chapters 140.3.3, 145.2.2, and 310.3 of the Administrative Policy Manual);

ANNEXE A

RENSEIGNEMENTS REQUIS DANS LES PRESENTATIONS

Les renseignements requis dans le POP ou les présentations distinctes servant à demander l'approbation de projets d'investissement doivent être considérés dans le cadre des types d'approbation décrits dans la politique du Conseil du Trésor sur le contrôle du coût des projets. Fondamentalement, les approbations des projets d'investissement se classeraient dans trois catégories générales: les approbations préliminaires des projets, les approbations effectives des projets et les approbations des dépassements de coût (c.-à-d. les approbations d'augmentations du coût total estimatif après que les approbations effectives des projets ont été données). Selon ces catégories, il faut tenir compte des points suivants dans la mesure du possible:

(Note: il est évident que, dans tous les cas, l'approbation du Conseil du Trésor reposera sur une justification complète des avantages par rapport aux coûts.)

a) pour les approbations préliminaires

(i) la raison du projet, y compris la sorte et le niveau de service ou de capacité à instaurer, à mettre au point ou à maintenir. (Dans le cadre d'un plan d'investissement à long terme approuvé, des précisions moindres seraient acceptables);

(ii) une analyse approfondie des possibilités, y compris le calcul du coût de régie du matériel pour chaque solution étudiée (voir les chapitres 140.3.3, 145.2.2 et 310.3 du Manuel de la politique administrative);

(iii) in regard to the overall project: the total estimated cost and class of estimate (normally C, expressed in both current and constant dollars); the expected completion date; a general description of the end product; and, when applicable, the estimated socio-economic benefits;

(iv) in regard to the specific items for which authority to spend funds is being sought, such as design, land acquisition or project management funds: the total cost (Cost Objective) expressed, where applicable, in both current and constant dollars (note that these items will themselves be considered capital projects and should be based on at least Class B estimates); the completion date (Time Objective); a comprehensive description of the end product (Performance Objective); the implementation approach, e.g. method of selection of contract; the cash-flow schedule; and any organizational arrangements;

(v) an assessment of procurement identification or procurement review status, if applicable (see Administrative Policy Manual Chapter 305 - Procurement Review);

(vi) any other interdepartmental consultation relevant to the project's contribution to other government programs, e.g. vessels, aircraft or related support

(iii) en ce qui concerne le projet global: le coût estimatif total et le type d'évaluation (normalement C, exprimé en dollars courants et en dollars constants); la date d'achèvement prévue; une description générale du produit fini; et, s'il y a lieu, les retombées socio- économiques prévues;

(iv) en ce qui concerne les éléments particuliers pour lesquels on demande des pouvoirs d'affecter des fonds tels que la conception, l'acquisition de terrain ou les fonds pour la gestion des projets: le coût total (Objectif "coût") exprimé, le cas échéant, en dollars courants et constants; (à noter que ces éléments seront eux-mêmes considérés comme des projets d'investissement et devraient être fondés sur des évaluations de type B); la date d'achèvement (Objectif "temps"); une description exhaustive du produit fini (Objectif "performance"); la méthode de mise en application, p. ex. le choix du marché, le calendrier des mouvements de trésorerie; et toute disposition organisationnelle;

(v) le cas échéant, une évaluation des indications d'achat ou de la situation de l'examen des achats (voir le chapitre 305 du Manuel de la politique administrative);

(vi) toute autre consultation interministérielle liée à la contribution du projet aux autres programmes du gouvernement, par ex. les navires, les aéronefs et les installafacilities, or socio-economic considerations applicable to the project;

(vii) any policy issues or institutional changes involved, or any impact on existing or potential legislation;

(viii) any known intentions with respect to public announcements and the timing thereof;

(b) for effective project approvals (Also refer to section 4.3.1 of Chapter 148 of the Administrative Policy Manual.)

(i) final assessment of any issues which were on-going or outstanding at the time of preliminary approval eg. procurement review;

(Note: in those cases where a department or agency is in a position to seek effective project approval directly, the information under (a)(i), (ii), (v), (vi) and (vii) above will be required in addition to the following)

(ii) the total estimated cost (Cost Objective) of the project, expressed in both constant and current dollars, including a provision for normal contingencies, inflation and foreign exchange provisions, etc., and the class of the estimate (at least class B).

tions de soutien connexes ou les considérations socio-économiques relatives au projet;

(vii) les questions de politique ou les changements institutionnels en cause, ou toute répercussion sur les lois existantes ou éventuelles;

(viii) les intentions connues au sujet des annonces publiques et les calendriers de celles-ci;

b) pour les approbations effectives des projets (aussi voir l'article 4.3.1 du chapitre 148 du *Manuel de la politique administrative*)

(i) l'évaluation définitive des questions qui étaient permanentes ou non réglées au moment de l'approbation préliminaire, par ex. l'examen des achats;

(Nota: Lorsqu'un ministère ou un organisme veut demander directement l'approbation effective d'un projet, il lui faut fournir les renseignements demandés en vertu de (a)(i), (ii), (v), (vi) et (vii) ainsi que les renseignements suivants).

(ii) le coût estimatif (Objectif "coût") total du projet, exprimé en dollars constants et courants, y compris les provisions pour les dépenses imprévues normales, l'inflation et le change, ainsi que le type de prévisions (au moins "B").

(Note: these costs should not include allowances for major risk factors such as substantial interruptions of work due to labour disputes. The potential costs resulting from major risk factors are to be estimated separately. These are required to inform the Treasury Board of potential future expenditures which might be difficult to avoid without abandoning the project. See Chapter 140, Appendix C, of the Administrative Policy Manual);

(iii) proposals for the management, control and accounting of contingency funds and other specific allowances (eg. inflation, foreign exchange);

(iv) the cost implications of any reductions or increases in person-years, operating costs or capital expenditures that may result from the completion of the project;

(v) a comprehensive description of the end product of the project (Performance Objective), including: the nature, basis and justification of the quality standards required; and, for accommodation construction projects, the rentable to gross ratio, useable to rentable ratio, return on investment, energy consumption target, operating cost target, and any other factors which might serve to measure the project's performance;

(Nota: ces coûts ne doivent pas comprendre de provision pour les facteurs de risque importants tels que les interruptions de travail notables en raison de conflits de travail. Les coûts éventuels découlant des facteurs de risque importants doivent être évalués à part. Ces données sont nécessaires pour informer le Conseil du Trésor des dépenses futures éventuelles qu'on pourrait difficilement éviter sans abandonner le projet. Voir le chapitre 140, appendice C, du Manuel de la politique administrative.)

(iii) les propositions relatives à la gestion, au contrôle et à la comptabilité des fonds pour éventualités et les autres provisions particulières (par ex. pour l'inflation, le change);

(iv) les répercussions sur les coûts de toute réduction ou augmentation des années-personnes, des coûts de fonctionnement ou des dépenses en capital qui peuvent découler de l'achèvement du projet;

(v) une description exhaustive du produit fini du projet (Objectif "performance"), incluant: la nature, le fondement et la justification des normes de qualité requises et, pour les projets de construction de logements, le coefficient d'espace à louer par rapport à l'espace total, le coefficient d'espace utilisable par rapport à l'espace à louer, le revenu de placement, l'objectif de consommation d'énergie visé, le coût de fonctionnement visé et les autres facteurs susceptibles de servir à mesurer l'efficacité du projet;

(vi) the planned time phasing of the expenditures, including the estimated project commencement and completion (Time Objective) dates and the planned cash flow for the years in between;

(vii) the implementation approach; and the planned organizational arrangements to ensure satisfactory project management and technical performance including the identification of an accountable project leader, and the definition of the responsibilities among project participants;

(viii) a statement that the physical execution of the project has not yet begun, other than the specific aspects authorized in the preliminary approval;

(ix) any information concerning public announcements already made or intended to be made;

(c) for increases to the total estimated project cost after effective project approval has been given (i.e. cost overruns):

(i) a detailed statement of the reasons for the required increase and, if due to management problems, the identification of remedial measures;

(ii) an assessment of options or alternatives available to the Treasury Board at the time of considering the submission, including the consequences of each;

(vi) le calendrier des dépenses, y compris les dates prévues du début et de la fin du projet (Objectif "temps"), et les mouvements planifiés de trésorerie pour les années intermédiaires;

(vii) la méthode de mise en application; et les mesures organisationnelles prévues pour assurer la gestion efficace du projet et sa qualité technique, y compris la désignation d'un chef de projet responsable, et la répartition des responsabilités entre les participants;

(viii) une déclaration portant que l'exécution du projet n'a pas encore débuté, sauf les aspects particuliers autorisés dans l'approbation préliminaire;

(ix) les renseignements concernant les annonces publiques déjà faites ou qu'on a l'intention de faire;

c) pour les augmentations du coût estimatif total des projets après que l'approbation effective a été donnée (c.-à-d. les dépassements de coût)

(i) un énoncé détaillé des raisons de l'augmentation demandée et, si elle est due à des problèmes de gestion, des précisions sur les mesures correctives;

(ii) une évaluation des choix ou des solutions dont dispose le Conseil du Trésor au moment de l'étude de la présentation, y compris les conséquences de chacun d'entre eux;

(iii) indication of any changes to estimated completion date or cash flow;

(iv) a clear indication of whether the approval sought is retroactive.

(Note: also refer to sections 2.7 and 4.2 of Chapter 148 of the Administrative Policy Manual.)

(iii) des précisions sur les changements de date d'achèvement prévue ou de mouvements de trésorerie;

(iv) une mention claire du caractère rétroactif ou non de l'approbation demandée.

(Nota: se référer également aux articles 2.7 et 4.2 du chapitre 148 du Manuel de la politique administrative).

PH

Distribution Network of the 1983 Access Register and Index of Personal Information

Packaging and Mailing

Each "package" to be mailed will contain the following publications:

1) Instruction Sheet for recipients of the package
2) Access Register (English)
3) Access Register (French)
4) Personal Information Index (English)
5) Personal Information Index (French)
6) Access Supplement (English)
7) Access Supplement (French)
8) Access to Information Request Form (2 pads of 50 forms each)
9) Personal Information Request Form (1 pad of 50 forms)
10) Access Brochure (1 pkg of 50)
11) Privacy Brochure (1 pkg of 25)
12) Poster

- Items 1, 2, 3, 4, 5, 8, 9 and 11 have been printed and are under embargo.
- Items 6 and 7 are at the printers and will be delivered June 14.
- Item 10 is at the printers and will be delivered June 10.
- The poster will go to the printers after final approval by the President.

The packages will be wrapped beginning June 14 and mailed in 10 working days or less. They will be sent "third class" parcel post. It takes one day for the packages to leave Ottawa. There is no predictable time period for delivery after packages reach the provinces and territories.

Distribution

1. Semi-staff Postal Stations - These postal outlets (2,039) are in communities with a population of 500 to 3,000; they are normally full-time established stations.

2. Supply and Services Canada - A special distribution program of the Publishing Centre numbers 1246 persons and institutions (see attached list).

   Senators and members of the Parliament of Canada are included in this distribution.

   Total libraries are 729 Canadian and 148 foreign.

   The criteria for libraries on the SSC checklist are as follows:

   - open to the general public at least 24 hours per week;
   - one full-time employee;
   - a population of 2000 in town or city;
     or a population of 1500 full-time and part-time students (universities);
     or a population of 1000 full-time and part-time students (community colleges).

3. Federal government coordinators - 106

4. Heads of Agencies - 112

5. In addition, there are 750 remaining copies for:

   press conference
   TBS/OCG senior staff
   other (Custody of R. Jelking)

6. SSC has been provided 2449 English and 1449 French copies "for sale". Federal government departments will purchase their copies from:

   Canadian Government Publishing Centre
   Supply and Services Canada
   K1A 0S9
   Telephone 997-2560